INDEPENDENT ORBITER ASSESSMENT

ASSESSMENT OF THE
MAIN PROPULSION
SUBSYSTEM
FMEA/CIL
VOLUME 2 OF 4

26 FEBRUARY 1988

的 TEST 的复数 (

ASSESSME ASSESSME NASA FME	NT ID:		MPS-1011 BASELINE			
SUBSYSTE MDAC ID:		MPS 1011 LO2 TAN				
LEAD ANA	LYST:	K.A. HO	DLDEN			
ASSESSME	NT:					
CRITICALITY FLIGHT			REDUND	ANCY SCR	REENS	CIL ITEM
	HDW/FU	JNC	A	В	С	
NASA IOA] [NA]	[NA] [NA]	[NA] [NA]	[] *
COMPARE	[/] []	[]	[]	[]
RECOMMEN	DATIONS:	(If d	lifferen	t from N	IASA)	
	[/] [.]	[]	[]	[] ADD/DELETE)
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []						
REMARKS: NASA INFORMATION IS BASED ON NASA FMEA/CIL REVIEW MEETING NOTES (DEF. J. BODCHES)						

ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:	1/20/88 MPS-101: 0518-2	2	N	MPS-1012 BASELINE				
SUBSYSTEM: MDAC ID: ITEM:	MPS 1012 LO2 TAN	K PRE-PRESS	CHECK VA	LVE (CV16	5)			
LEAD ANALYST:	EAD ANALYST: K.A. HOLDEN							
ASSESSMENT:								
		REDUNDANC	SCREENS		CIL ITEM			
FLICHDW/		r NC A B		:	LIEN			
NASA [2 / IOA [3 /	R] [P] [] P]	F]' [F F] [P	'] ']	[X] *			
COMPARE [N /] [] [] [N	.]	[]			
RECOMMENDATION	: (If d	ifferent f	com NASA)					
] [] [] [] (AI	[] DD/DELETE)			
* CIL RETENTIO	RATIONAL	E: (If app	. A	DEQUATE	l j			
REMARKS: IF THIS CHECK VALVE WOULD AD ON THE HEAVY L UNLIKELY. HOW THE LO2 TANK T UNPRESSURIZED REDUNDANCY. N ITEMS LIST OF	D REDUNDAN D2, LOSS O EVER, LOSS D BUCKLE D TANK. CON ASA INFORM	CY. SINCE F LO2 AND OF GO2 UL OUE TO ATMO TAMINATION ATION IS B	THE ACCEI LPOT PUMP LAGE PRESS SPHERIC FO CAN CAUSE	CERATION A CAVITATION SURE COULI ORCES ON A E LOSS OF	ACTS STRONGLY ON ARE D CAUSE AN ALL			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1013					
SUBSYSTEM: MDAC ID: ITEM:	VALVE (CV16)					
LEAD ANALYST:	K.A. HOLDEN					
ASSESSMENT:						
CRITICAL FLIGH		NS CIL ITEM				
HDW/FU		C				
NASA [/ IOA [2 /2] [] []] [NA] [NA]	[] [] * [NA] [X]				
COMPARE [N /N] [N] [N]	[и] [и]				
RECOMMENDATIONS:	(If different from NASA	A)				
] [] []	[] [] (ADD/DELETE)				
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []						
REMARKS: THIS WORKSHEET SHOULD BE COMBINED WITH MPS-1014. THE BURNING OF THIS VALVE MIGHT CAUSE GO2 TO LEAK INTO THE AFT COMPARTMENT POSSIBLY CAUSING OVERPRESSURIZATION. THE LOSS OF ULLAGE PRESSURE MIGHT CAUSE THE LO2 TANK TO BUCKLE DUE TO ATMOSPHERIC FORCES ACTING ON AN UNPRESSURIZED TANK.						

ASSESSME ASSESSME NASA FME	NT	ID	:	MPS-1014 BASE				NASA DA BASELI N]					
SUBSYSTE MDAC ID: ITEM:	M:			MPS 1014 LO2 T					ALVE (C	V16)						
LEAD ANA	LYS	T:		K.A.	IOE	LDE	N:									
ASSESSME	NT:															
CRITICALITY FLIGHT				REDUNDANCY SCREEN			ENS			IL TE	м					
	Н	DW	/FUI	NC.		A			В			С				
NASA IOA	[[1	/1]	[NA]	[N.]	[] NA]	[X]	*
COMPARE	[N	/N]	[N]	[N]	[n]	[N]	
RECOMMEN	DAT	ΊΟ	NS:	(If	d:	iff	erent	E	fro	om NAS	SA)					
-	ι	1	/1]	[NA	<u>\</u>]	[N?	A]	[NA]] (ADE	A 0/D	-	TE)
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []																
REMARKS: THIS WORKSHEET SHOULD BE COMBINED WITH MPS-1013.																

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/20/88 MPS-1021 0451-1	NASA DATA: BASELINE NEW	[
SUBSYSTEM: MDAC ID: ITEM:	1021	ALVE (CV31, 33, 35)				
LEAD ANALYST:	K.A. HOLDEN					
ASSESSMENT:						
カナ てんび	ITY REDUNDANO	Y SCREENS	CIL ITEM			
HDW/FU	NC A	В С				
NASA [2 /1R IOA [1 /1	[F] [NA] [F] [P] NA] [NA]	[X] * [X]			
COMPARE [N /N] [N] [иј [иј	[]			
RECOMMENDATIONS:	(If different f	rom NASA)				
[2 /1R	[P] [F] [F] (A	[] DD/DELETE)			
* CIL RETENTION	RATIONALE: (If app	olicable) ADEQUATE	[]			
ADEQUATE [] INADEQUATE [] REMARKS: IF THIS CHECK VALVE FAILS TO OPEN, LO2 WILL ACCUMULATE INSIDE THE POGO ACCUMULATOR PUSHING THE GO2 OUT THROUGH THE PRESSURE ISOLATION VALVE. THIS WOULD NEUTRALIZE THE POGO SUPPRESSION SYSTEM CAUSING LOW-FREQUENCY VIBRATIONS TO BE ADDED TO THE SHUTTLES DYNAMICS IN THE FORM OF VARYING THRUST. THESE ADDITIONAL DYNAMICS COULD CAUSE THE LOSS OF THE VEHICLE. SINCE THE VALVE IS REALLY TWO CHECK VALVES IN PARALLEL, TWO FAILURES ARE REQUIRED FOR THE DESCRIBED EFFECTS TO OCCUE. NASA INFORMATION IS BASED ON THE RI/NASA CRITICAL ITEMS LIST OF 12-23- 87 AND THE 0451-1 CIL WORKSHEET OF 9-16-87. THIS WORKSHEET SHOULD BE COMBINED WITH MPS-1023.						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1022		NASA DATA: BASELINE [] NEW [X]					
SUBSYSTEM: MDAC ID: ITEM:	1022	CHECK VALVE (C	V31, 33, 35)					
LEAD ANALYST:	K.A. HOLDE	EN						
ASSESSMENT:								
CRITICAL: FLIGHT		DUNDANCY SCREE	NS	CIL ITEM				
HDW/FU		B 22	C					
NASA [2 /1R IOA [2 /1R] [F]] [F]	[P] [P]	[X] * [X]				
COMPARE [/] [N] []	[]	[]				
RECOMMENDATIONS:	(If diff	ferent from NAS	A)					
[2 /1R] · [F] [F]	[F] (AC	[] DD/DELETE)				
* CIL RETENTION I	RATIONALE:	,) ADEQUATE INADEQUATE					
REMARKS:								
GROUND CHECKOUT VALVES ARE OPERAT								
RI/NASA CRITICAL								
DATED 9-16-87.	THIS TOA WO	RKSHEET SHOULD	BE COMBINED	OKKSHEET				
WITH MPS-1023.			(<u>현행</u> 왕) ** 한, 한 조정···· <u>변경 ··· ··</u>	The Medical Court of the Property of the Court of the Cou				

ASSESSMENT ID:	ASSESSMENT DATE: 1/20/88 ASSESSMENT ID: MPS-1023 NASA FMEA #: 0451-1						
SUBSYSTEM: MDAC ID: ITEM:	31, 33, 35)						
LEAD ANALYST:	K.A. HOLDEN						
ASSESSMENT:							
	ITY REDUNDANCY SCREEN	S CIL ITEM					
FLIGH HDW/FU	NC A B	C					
NASA [2 /1R IOA [3 /2R	[F] [F] [F] [P] [X] * P] [X]					
COMPARE [N /N) [N] [] [] []					
RECOMMENDATIONS:	RECOMMENDATIONS: (If different from NASA)						
[2 /1R] [F] [F] [F] [] (ADD/DELETE)					
* CIL RETENTION	RATIONALE: (If applicable) I	ADEQUATE [] NADEQUATE []					
GO2 AN OVERFLOW ACCUMULATOR LEVE CAUSING UNCONTAI RELIABLY INDICATE THAT BO PROPERLY. BOTH BECAUSE OF CONTA	LVE FAILS TO OPEN THE STAN CAPABILITY IF THE LO2 LEVE L LOWER. THIS MIGHT ALLOW NED ENGINE DAMAGE. GROUND TH DUAL REDUNDANT CHECK VAVE MINATION. NASA INFORMATICS ITEMS LIST OF 12-23-87 AND AMBRICAN STANDARD STA	DPIPE DOES NOT GIVE THE L IN THE POGO GO2 INTO THE HPOTP CHECKOUT CANNOT LVES ARE OPERATING S CAN FAIL TO OPEN N IS BASED ON THE					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/20/88 MPS-1024 0451-2	1/20/88 NASA D. MPS-1024 BASEL 0451-2			
MDAC ID:	MPS 1024 LO2 BLEED C	HECK VALVE (C	V31, 33, 35)	
LEAD ANALYST:	K.A. HOLDEN				
ASSESSMENT:					
		OUNDANCY SCREE B		TOTAL	
HDW/FU	NC A	В	G ====================================	₹	
NASA [3 /3 IOA [1 /1] [NA]] [NA]	[NA] [NA]	[NA] [NA]	[X] *	
COMPARE [N /N] []	[]	[]	[N]	
RECOMMENDATIONS:	(If diffe	erent from NAS	A)		
[/] []	[]	[] A)	[] DD/DELETE)	
* CIL RETENTION	RATTONALE: (Tf applicable)		
			ADEQUATE INADEQUATE	[]	
REMARKS:					
THE VALVE IS NOT	MALLY OPEN D	URING ENGINE	OPERATION T	O ALLOW GO2	
1024 SHOULD BE					
CRITICAL ITEMS I	IST OF 12-23	-87 AND THE R	I/NASA WORK	SHEET	

DATED 9-16-87.

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1025	NASA DATA: BASELINE [] NEW [X]					
MDAC ID:	MPS 1025 LO2 BLEED CHECK VALVE	(CV31, 33, 35)					
LEAD ANALYST:	K.A. HOLDEN	A STANCE OF THE					
ASSESSMENT:							
CRITICAL FLIGH	ITY REDUNDANCY SCRI	ITEM					
	NC A B	C					
NASA [3 /3 IOA [/NA] [NA] [NA]] [NA] [NA]	[NA] [X] * [NA] []					
COMPARE [N /N] [] []	[] []					
RECOMMENDATIONS:	(If different from N	ĀŜA)					
[3 /3] [P] [F]	[P] [] (ADD/DELETE)					
* CIL RETENTION	RATIONALE: (If applicab	le) ADEQUATE [] INADEQUATE []					
REMARKS: THE RI/NASA CRITICAL ITEMS LIST (12-23-87) INDICATES 3/3A, MEANING 3/3 FOR NOMINAL FLIGHT AND 1/1 FOR ABORT. THE RI/NASA CIL WORKSHEET (DATED 9-16-87) DESCRIBES A FAILURE SEQUENCE THAT CONFORMS TO A CRITICALITY OF 2/1R FOR ABORT. IOA RECOMMENDS 3/3 FOR NOMINAL AND 2/1R FOR ABORT, WITH THE MAIN OXIDIZER VALVE AS THE REDUNDANT ITEM WHOSE FAILURE WOULD ALLOW LOSS OF PROPELLANT.							

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/20/88 MPS-1026 0451-1	1	NASA DATA: BASELINE [] NEW [X]
SUBSYSTEM: MDAC ID: ITEM:	1026	ECK VALVE (CV3	1, 33, 35)
LEAD ANALYST:	K.A. HOLDEN		
ASSESSMENT:			
CRITICAL FLIGH	ITY REDU	NDANCY SCREENS	CIL
	NC A	В	C
NASA [2 /1R IOA [2 /1R] [F]	[F] []	P] [X] * P] [X]
COMPARE [/] [N]	[] [] []
RECOMMENDATIONS:	(If differ	ent from NASA)	
[/] []] []] [] (ADD/DELETE)
* CIL RETENTION 1	RATIONALE: (I		ADEQUATE [] ADEQUATE []
REMARKS:			
THE IOA WORKSHEET	r addresses o	NLY THE PERIOD	BETWEEN MECO AND MPS
			OUND CHECKOUT CANNOT
			ECK VALVES ARE BOTH JLD BE COMBINED
WITH 1023. NASA	INFORMATION	IS BASED ON THE	E RI/NASA CRITICAL
ITEMS LIST OF 12-	-23-87 AND TH	E RI/NASA WORKS	SHEET DATED 9-16-87.

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-102	NASA DATA: BASELINE [] NEW [X]				
SUBSYSTEM: MDAC ID: ITEM:	MPS 1027 LO2 BLE					
LEAD ANALYST:	K.A. HO	LDEN	\ ''	e e a como de la como e de la co		
ASSESSMENT:						
CRITICAI FLIGH		REDUNDANCY SCRE	REDUNDANCY SCREENS			
		A B	С	ITEM		
NASA [/ IOA [3 /3] [] [] NA] [NA]	[] [NA]	[] *		
COMPARE [N /N] [N] [N]	[N]	[]		
RECOMMENDATIONS:	(If d	ifferent from NA	ASA)			
[/] [] []	[]	[] LDD/DELETE)		
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []						
REMARKS: IT WAS ORIGINALLY REPORTED THAT THE FAILURE OF THE BLEED CHECK VALVE TO CLOSE WOULD DELAY THE LAUNCH. SINCE THERE IS NO MONITOR TO SHOW THE POSITION OF THIS CHECK VALVE, THE LAUNCH WOULD NOT BE DELAYED. IOA WORKSHEET 1027 SHOULD BE DROPPED.						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1028		BASELINE	[
SUBSYSTEM: MDAC ID: ITEM:	MPS 1028 LO2 BLEI	ED CHECK	VALVE (CV	31, 33, 35)	n verse in including to	
LEAD ANALYST:	K.A. HOI	K.A. HOLDEN				
ASSESSMENT:						
CRITICAL: FLIGHT		REDUNDAN	CY SCREENS	3	CIL ITEM	
· -	NC	A	В	c .	TIEM	
NASA [2 /1R IOA [3 /3] [F] [NA] **** [F] [NA] [P] NA]	[X] * []	
COMPARE [N /N] [N] [и] [и]	[и]	
RECOMMENDATIONS:	(If di	ifferent	from NASA)			
[2 /1R] [F] [F] [F]	[] DD/DELETE)	
* CIL RETENTION I	RATIONALE	E: (If ap		ADEQUATE IADEQUATE	[]	
REMARKS: THIS IOA WORKSHE	em apprite	e onty m				
TEMPERATURE COND	TIONING	FOR ONE	ENGINE MAY	CAUSE LAU	NCH DELAY.	
NASA INFORMATION	IS BASE	ON THE	RI/NASA CF	RITICAL ITE	MS LIST (12-	
12-87) AND RI/NAS					•	
THIS IOA WORKSHE	T SHOULL	BE COMB	TWED MITH	#1023.		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1031	PS-1031 BASELINE []						
SUBSYSTEM: MDAC ID: ITEM:	MPS 1031 GO2 PRES	SURE FLO	w CONTRO	L VALVE (LV	53, 54, 55)			
LEAD ANALYST:	K.A. HOL	DEN			• · · · · · · · · · · · · · · · · · · ·			
ASSESSMENT:								
CRITICAL FLIGH	ITY	REDUNDAN	CY SCREE	NS	CIL ITEM			
HDW/FU		A	В	С				
NASA [2 /1R IOA [3 /2R] [F] [P] [P] F]	[P] [P]	[X] *			
COMPARE [N /N] [и][N]	[]	[]			
RECOMMENDATIONS:	(If di	fferent	from NAS	A)				
[/] [] [1	[] (A	[] DD/DELETE)			
* CIL RETENTION	RATIONALE	: (If ap) ADEQUATE INADEQUATE				
REMARKS: FAILURE OF TWO F LIMITS ON O2 ULL ULLAGE PRESSURE IS MONITORED AND REF: RI/NASA CI BORCHES).	AGE PRESS TO FALL B WILL BE	SURE. LO SELOW ITS INDICATE	SS OF AL MINIMUM D TO THE	L REDUNDANC ALLOWABLE CREW.	Y WILL CAUSE VALVE. THIS			

ASSESSMENT ASSESSMENT NASA FMEA	ID:	MPS-	MPS-1032 BASELIN						BASELINI]
SUBSYSTEM: MDAC ID: ITEM:		MPS 1032 GO2	PRES	SU	RE FLO	W (CONTRO	or a	ALVE (L	753,	5	4, 55)
LEAD ANALY	ST:	K.A.	HOL	DE	1							
ASSESSMENT	!:											
CR	ITICA FLIC	ALITY		RE	DUNDAN	CY	SCRE	ens		CI	L	
		FUNC		A		В		C	******		. E.M	
NASA [IOA [2 /1 3 /2	LR] 2R]] [F P] [P F]	[F [P]]	X X] *]
COMPARE [N /1	4]	[N] [N]	[N]	[)
RECOMMENDA	TIONS	5: (I	f di	ffe	erent	fro	om NAS	SA)				
	/]	[•] []	[] (2		DE] LETE)
* CIL RETE	NTION	N RATIO	NALE	:	(If ap	pl i	icable	A.	DEQUATE DEQUATE]
REMARKS:) :
LOSS OF A FALL BELOW												
REF: RI/N BORCHES).	ASA (CIL 12-	23-8	7,	NASA	FMI	EA/CII	L RE	VIEW MEE	TIN	G	(J.E.
	1. 1.1	1.04	- =====================================	= = :					.4.	÷		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-103	3		NASA DATA: BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM:	MPS 1033 GO2 PRE	SSURE FLOW	CONTROL	VALVE (LV5	53, 54, 55)
LEAD ANALYST:	к.а. но	LDEN			
ASSESSMENT:					
CRITICAL FLIGH		REDUNDANCY	SCREENS	3	CIL ITEM
HDW/FU		A E	;	С	I I II M
NASA [2 /1R IOA [3 /1R] [F] [F P]] [F] P]	[X] *
COMPARE [N /] [и] [и] [N]	[]
RECOMMENDATIONS:	(If d	ifferent fr	om NASA)	• •	
[2 /1R	.] [P] [F) [[] DD/DELETE)
* CIL RETENTION	RATIONAL	E: (If app)		ADEQUATE NADEQUATE	
REMARKS: SECOND FAILURE M VENTING OF 02. CLOSE. LOSS OF ULLAGE PRESSURE. EVENT.	GROUND C	HECKOUT SHO	JRIZATION OULD DETE CTABLE BY	OF THE OR	TANK AND LLURE TO ONS OF HIGH

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1034	NASA DATA: BASELINE [] NEW [X]
SUBSYSTEM: MDAC ID: ITEM:	1034	TROL VALVE (LV53, 54, 55)
LEAD ANALYST:	K.A. HOLDEN	
ASSESSMENT:		
FLIGH	ETY REDUNDANCY SC F NC A B	ITEM
IOA [2 /2	j [NA] [NA]	[NA] [X] * [NA] [X]
COMPARE [N /N] [] []	[] []
RECOMMENDATIONS:	(If different from	NASA)
[/] [] []	[] [] (ADD/DELETE)
	RATIONALE: (If application	ble) ADEQUATE [] INADEQUATE []
	FIRE MAY CAUSE LOSS OF NASA FMEA/CIL REVIEW	VEHICLE. REF: RI/NASA MEETING NOTES (J.E.

ASSESSMEN ASSESSMEN NASA FME	NT	TI):	MP	s-10	35	5					NASA I BASEI			x]	·
SUBSYSTEM MDAC ID:				MP 10 GO	35	ES	SSURE F	LOV	w (CONT	ROL	VALVE	(LV	53,	5	4,	55)
LEAD ANA	LYS	T:	:	K.	A. H	ЮІ	LDEN						-				
ASSESSME	NT:	;															
	CR1		[CAL				REDUND	AN	CY	SCR	EEN	S		CI II	L EM	į.	
	F		/FU				A		В			С					
NASA IOA] [1	/1 /1]		[NA] NA]	[NZ NZ	A] A]	[NA] NA]]	X X]	*
COMPARE	[/]		[3	[]	[]		[]	
RECOMMEN	DA!	rI	ons:	:	(If	đ:	ifferen	ıt	fr	om N	ASA)					
	[/]		[]	[]	[1	(A)		/DE		ETE)
* CIL RE	TE	NT:	ION	RAT	ION	AL	E: (If	ap	pl	icab		ADEQU.		•]	
REMARKS: THIS IOA CIL OF 1 BORCHES)	W(2-)	OR: 23	KSHI -87	EET ANI	JOHS SAN C	UL SA	D BE CO)MB	IN R	ED W	ITH W M	1034. EETING	RE NOT	F: ES) (J	lΙ/ Γ.Ε	/NASA

ASSESSM ASSESSM NASA FM	ENT I	D:		1041					NASA I BASEI		[]	<u> </u>
SUBSYST MDAC ID ITEM:			1041	FEED	(ORE	3/ET)	DISC	ONNE	ECT (PI			·	٠
LEAD AN	ALYST	:	K.A.	HOLI	DEN								
ASSESSM	ENT:										-		1791 0
	F	LIGH'						REENS		• 1 .	CIL		
	HD	M/ F.OI	NC	Æ	4		B		С				
NASA IOA	[1	/1 /1]	[]	NA] NA]	[NA] NA]]	NA] NA]		[X] *]	
COMPARE	[/]	(]	C]	[]		[]	
RECOMME	NDATI	ons:	(1	f di	ffere	ent f	rom N	(ASA)					
	[/]	ĺ]	[]	[]		[D/D!] ELETE)	
* CIL R		ION 1	RATIO	NALE:	: (If	app	licab	ole) IN	ADEQUA IADEQUA	TE TE	[]	
REMARKS THIS IO	-	KSHE	ET SH	ÖÜLD	BE C	COMBI	NED W	ттн	1043.	REF	': I	RI/NASA	
CIL OF													

		PS-1041A BASELINE []								
MDAC ID:	MPS 1041 LO2 FEE									
LEAD ANALYST: K.A. HOLDEN										
ASSESSMENT:										
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C										
·			_		r ·	1 *				
NASA [3 /3 IOA [1 /1] [NA]	[NA]	[NA]	<u></u>] *]				
COMPARE [N /N] []	[]	[]	[]				
RECOMMENDATIONS:	(If d	ifferen	t from NA	SA)						
[/] []	[]	[] (A	[LDD/DE] LETE)				
* CIL RETENTION	RATIONAL	E: (If	applicabl							
				ADEQUATE INADEQUATE]				
REMARKS: THE 1/1 CRITICAL FAILURE TO OPEN. REF: NASA FMEA/	FAILUR	E TO OF	EN WILL C	1 WAS NOT DE AUSE LAUNCH	RIVEN I	- ВУ ТНЕ •				

ASSESSME ASSESSME NASA FME	NT I	D:	1/21/ MPS-1 0408-	042	2				NASA DAT BASELIN NE	
SUBSYSTE MDAC ID: ITEM:			MPS 1042 LO2 F	ĖĖI	O (ORB,	ET)	DISC	ONNE	ECT (PD1)	
LEAD ANA	LYST	:	K.A.	HOI	LDEN					
ASSESSME	NT:									
					REDUNI	DANCY	scr	EENS	5	CIL
		LIGH W/FU	NC I		A	E	3		С	ITEM
NASA IOA	[1	/1 /1]	[NA] NA]	[N	IA] IA]]	NA] NA]	[X] * [X]
COMPARE	[/]	[]	[]	[]	[]
RECOMMEN	DATI	ons:	(IÎ	d:	ffere	nt fr	om N	ÁSA)		
	. , Ç	/	1	[]	[]	[] ([] ADD/DELETE)
* CIL RE		ION 1	RATION	ALI	E: (If	appl	icab.		ADEQUATE IADEQUATE	
REMARKS:		A CI	L OF 1	2-2	23-87 7	AND C	IL W	ORKS	HEET DAT	ED 12-15-87.

ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:	MPS-1042A	MPS-1042A BASELINE [
SUBSYSTEM: MDAC ID: ITEM:	MPS 1042 LO2 FEED (ORB/	ET) DISCONNECT (PD1)					
LEAD ANALYST:	K.A. HOLDEN	•	e e e e e e e e e e e e e e e e e e e				
ASSESSMENT:							
CRITICA FLIG HDW/F		B C	CIL ITEM				
nD#/ F	JIC A	2					
NASA [1 /1 IOA [1 /1] [NA]] [NA]	[NA] [NA] [NA] [NA]	[X] * [X]				
COMPARE [/] []	[] []	[]				
RECOMMENDATIONS	: (If differen	nt from NASA)					
[/] []	[] []	[] (ADD/DELETE)				
* CIL RETENTION	RATIONALE: (If	applicable) ADEQUATE INADEQUATE					
REMARKS: REF: RI/NASA C 87.	IL OF 12/23/87 A	AND RI/NASA CIL WORKS	SHEET OF 12-15-				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/21/88 MPS-1043 0408-2	3		NASA DATA: BASELINE NEW	[] [x]
SUBSYSTEM: MDAC ID: ITEM:	MPS 1043 LO2 FEED	O (ORB/ET)	DISCONN	ECT (PD1)	
LEAD ANALYST:	K.A. HOI	DEN			
ASSESSMENT:					
CRITICAL: FLIGHT HDW/FUI	r	REDUNDANC A	CY SCREEN B	c	CIL
NASA [1 /1 IOA [1 /1] [NA] [NA] [NA] NA]	[X] * [X]
COMPARE [/] [] [] []	[]
RECOMMENDATIONS:	(If di	.fferent f	rom NASA)	
] [] [] [[] DD/DELETE)
* CIL RETENTION I		: (If app	I	ADEQUATE	[]

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-104	4		NASA DATA BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM:	1044	D (ORB/ET) DISCONN	ECT (PD1)	
LEAD ANALYST:	к.а. но	LDEN			
ASSESSMENT:					
CRITICAI FLIGH		REDUNDAN	CY SCREEN	s	CIL ITEM
		A	В	С	
NASA [1 /1 IOA [2 /2] [NA] [NA] [NA] [NA] [NA] NA]	[X] *
COMPARE [N /N] [] [] []	[]
RECOMMENDATIONS:	(If d	ifferent	from NASA)	
[/] [] [] [] (A	[] DD/DELETE)
* CIL RETENTION	RATIONAL	E: (If ap	plicable)	ADEQUATE	r 1
			I	NADEQUATE	
REMARKS: PROPULSIVE VENT: AND POSSIBLE DES REF: RI/NASA (15-87.	TRUCTION	OF THE V	EHICLE.		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1045		* tr	NASA DATA: BASELINE NEW	
	MPS 1045 LO2 FEED	(ORB/ET)	DISCONNI		
LEAD ANALYST:	K.A. HOLI	DEN			
ASSESSMENT:					
CRITICAL FLIGH	ITY I	REDUNDANC	Y SCREENS	5	CIL ITEM
	NC 1	A.	В	c ,	IIEM
NASA [1 /1 IOA [1 /1] [1	NA] [AN	NA] [NA] [NA] NA]	[X] * [X]
COMPARE [/] [] [] []	
RECOMMENDATIONS:	(If di	fferent f	rom NASA)		and the second second of the second
[/] [] [] [] (AI	[] DD/DELETE)
* CIL RETENTION	RATIONALE	: (If app	.= .	ADEQUATE JADEQUATE	[]
REF: RI/NASA CI: 87.		3-87 AND		CIL WORKSHE	EET OF 12-15-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1046	5		BASELINE NEW						
	MPS 1046 LO2 FEED									
LEAD ANALYST:	K.A. HOI	LDEN								
ASSESSMENT:										
FLIGHT	r	REDUNDANG			CIL ITEM					
HDW/FUI	NC	A	В	С						
NASA [1 /1 IOA [2 /2] [NA] [AN] [AN	NA] [NA] [NA] NA]	[X] *					
COMPARE [N /N] [] [] []	[]					
RECOMMENDATIONS:	(If di	ifferent i	from NASA)						
[/] [] [] [] (AI	[] DD/DELETE)					
* CIL RETENTION 1	RATIONALE	E: (If app	•	ADEQUATE	•					
REMARKS: DAMAGE TO TPS TIL DURING REPRESS CAN LEAD TO LOSS	AUSING LO	OSS OF AF	SURE AND	NADEQUATE /OR LOSS OI MENT PURGE	F HELIUM					

ASSESSMI ASSESSMI NASA FMI	ENT	ID:	1/21 MPS- 0513	1051		NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEMDAC ID:			MPS 1051 GO2		SURIZ	ZATIOI	ON (ORB/ET) DISCONNECT (PD4						
LEAD ANA	ALYS	T:	K.A.	HOI	DEN								
ASSESSMI	ENT:											1175	
		TICAL FLIGH			REDUN	IDANC				IL TEM			
	H	DW/FU	NC		A		В	(C				
NASA IOA	[[3 /3 3 /3]]	NA] NA]	1] 1]	NA] NA]	[]	NA] NA]		[] *	
COMPARE	[_	/]	[j	_ [j	, []		[]	
RECOMMEN	IDAT	ions:	(I	f di	ffere	ent fi	com N	ASA)					
-	[/]	[]	[]	[]	(AI	[DD/I] DELETE)	
* CIL RI		TION	RATIO	NALE	: (If	app]	licab	1	ADEQU ADEQU		_]	
REMARKS:		SA FM	EA/CI	L RE	VIEW	MEET	ING N	OTES	(J.E	. BOF	CHE	ES).	

ASSESSMI ASSESSMI NASA FMI	ENT	TI):	MP	S-10	52	2		NASA DATA: BASELINE [] NEW [X]							
SUBSYST				10	MPS 1052 GO2 PRESSURIZATION (ORB/ET) DISCO							SCONNI	E C I	r ((PI	04)
LEAD AN	ALY	ST	:	K.	А. Н	ЮІ	LDEN									
ASSESSM	ENT	:														
CRITICALITY FLIGHT							REDUN	DAN	CY S	CREEN	5			IL TEN		
	1	_		_			A		В		С					
NASA IOA	[[1 2	/1 /2]		[NA] NA]	[NA] NA]	[[NA]]	X X]	*
COMPARE	[N	/N]		[]	[]	Ţ]		[]	
RECOMME	NDA	TI	ONS	:	(If	d:	iffere	nt :	froπ	NASA)					
	[/]		[]	[)	[]	(A)		/DI		ETE)
* CIL R	ETE	NT	ION	RAT	ION	\L	E: (If	ap	plic	cable)			_			
										I	ADE(NADE(QUATE QUATE	[]	
REMARKS THE POS CRITICA	SIB	Y	OF :	1/1.						·						
REF: R	I/N J.E	AS	A C	IL C)F 12 5).	2-:	23-87	AND	RI/	'NASA	FMEA,	CIL R	EV)	ſΕΊ	N]	MEETIN(

ASSESSMENT DATE: 1/21/88 ASSESSMENT ID: MPS-1053 NASA FMEA #: 0513-1							NASA DATA: BASELINE [] NEW [X]									
SUBSYSTE MDAC ID:				ME 10 GC)53	RES	SSURIZ	SURIZATION (ORB/ET) DISCONNEC						r	(P	D4)
LEAD ANA	LY	ST	:	ĸ.	Α.	но	LDEN									
ASSESSME	NT	:														
CRITICALITY FLIGHT HDW/FUNC							REDUI		y scr B	REENS	,	CIL ITEM				
NASA IOA	[1	/1 /1]		[NA] NA]	[NA] NA]	[NA] NA]		[X X]	*
COMPARE	[/]		[]	[]	[]		[]	
RECOMMEN	DA?	ric	ons:		(If	d:	iffere	ent f	rom N	IASA)					~	
-	[/]		Ţ]	[]	[]	(A] ELI	ETE)
* CIL RE	TE	T	гои	RAT	'ION	ALI	E: (If	app	licab	•	3 DEGI	3 MB	-		,	
											ADEQU. ADEQU		[]]	
REMARKS: REF: RI NOTES (J	. E	. I	BORC	HES		2-2	23-87		RI/NA	IN SA F	ADEQU MEA/C	ATE	•	Ę	j W 1	MEET.

ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:	: 1/21/88 MPS-105 0513-5	3 A	NASA DATA: BASELINE [] NEW [X]								
SUBSYSTEM: MDAC ID: ITEM:	MPS 1053 GO2 PRE	SSURĪZĀ!	rion (orb,	/ET) DISCONN	ECT (PD4)						
LEAD ANALYST:	K.A. HC	LDEN									
ASSESSMENT:											
CRITICA FLIC		REDUND	ANCY SCRE	ENS	CIL ITEM						
		A	В	С							
NASA [1 /2 IOA [1 /2]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[X] * [X]						
COMPARE [/]	[]	[]	[]	[]						
RECOMMENDATIONS	: (If o	differen	t from NA	SA)							
[/	1	[]	[]	[] (7	[] ADD/DELETE)						
* CIL RETENTIO	N RATIONA	LE: (If	applicabl	e) ADEQUATE INADEQUATE	[]						
REMARKS: REF: RI/NASA CIL OF 12-23-87 AND NASA FMEA/CIL REVIEW MEETING NOTES (J.E. BORCHES).											

ASSESSME	SSESSMENT DATE: 1/21/88 SSESSMENT ID: MPS-1054 ASA FMEA #: NA							NASA DATA: BASELINE [] NEW [X]								
SUBSYSTE MDAC ID: ITEM:			MPS 1054 GO2		URIZ	ATION	ON (ORB/ET) DISCONNECT (PD4)									
LEAD ANA	LYST	:	K.A.	HOLD	EN											
ASSESSME	NT:															
	F	LIGH'				DANCY B		EENS	CIL ITEM							
	ועת	N/FU	NC	. А	•	D		C								
NASA IOA	[[2	/ /2]	[[N] 'A]	[[N] A]	[] [AN]	[X] *						
COMPARE	[11	/N]	[N]	[N]	[N]	[N]						
RECOMMEN	DATI	ons:	. (I	f dif	fere	nt fr	om N	ASA)								
	[/]	Į.]	[]	[]	[(ADD/DE] LETE)						
* CIL RE		ION 1	RATIO	NALE:	(If	appl	icab	le) ADEQUA' INADEQUA'	•]						
		KSHE	ET SH	OULD	BE C	OMBIN	ED W	ITH NO LOS	s. combi	JSTION						
OF COMPO									1.4							

NASA DATA:

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/21/88 MPS-1055 NA		NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEM: MDAC ID: ITEM:	MPS 1055 GO2 PRES	ION (ORB/	ET) DISCONN	ECT (PD4)						
LEAD ANALYST:	K.A. HOL									
ASSESSMENT:										
CRITICAL FLIGH		REDUNDA	NCY SCREE	ns	CIL ITEM					
HDW/FU		A	В	C						
NASA [/ IOA [1 /1] [] NA]	[] [NA]	[] [NA]	[x] *					
COMPARE [N /N] []	N]	[и]	[N]	[N]					
RECOMMENDATIONS:	(If di	fferent	from NAS	A)						
[1 /1] [:	NA]	[NA]		[A] DD/DELETE)					
* CIL RETENTION	RATIONALE	: (If a	pplicable	ADEQUATE	[]					
REMARKS:				INADEQUATE	l j					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1056		NASA DATA: BASELINE [] NEW [X]								
MDAC ID:	MPS 1056 GO2 PRESS	URIZATIO	ON (ORB/	ET) DISCONNI	ECT (PD4)						
LEAD ANALYST:	K.A. HOLD	EN									
ASSESSMENT:											
FT.TCH'	ITY R F NC A		SCREE B	ns C	CIL						
NASA [3 /3 IOA [3 /3] [N.	[A] [A] [NA] NA]	[NA] [NA]	[X] *						
COMPARE [/] [] []	[]	[]						
RECOMMENDATIONS:	(If dif	ferent f	from NAS	A)							
	j_ [] [, J	[]]A)	[] DD/DELETE)						
* CIL RETENTION I		(If app) ADEQUATE INADEQUATE							
REMARKS: THE RI/NASA CIL INDICATES A 1/1 CRITICALITY DURING ABORTS FOR THIS FAILURE MODE. IOA CONCURS. REF: NASA FMEA/CIL REVIEW MEETING NOTES (J.E. BORCHES).											

ASSESSME ASSESSME NASA FME	NT ID:				NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEMDAC ID:		MPS 1061 LO2 TAN	K PRE	-PRESS (OR	B/GND) DIS	C (PD9)						
LEAD ANALYST: K.A. HOLDEN												
ASSESSME	NT:											
	FLIGH	T		NDANCY SCR		CIL ITEM						
	HDW/FU	NC	A	В	С							
NASA IOA	[3 /3 [3 /3] [NA] NA]	[NA] [NA]	[NA] [NA]	[] *					
COMPARE	[/] [1	[]	[]	[]					
RECOMMEN	DATIONS:	(If d	liffer	ent from N	IASA)							
	[/] []	[]	[]	[(ADD/D] ELETE)					
* CIL RE	TENTION	RATIONAL	LE: (]	f applicat	ole) ADEQUA INADEQUA]					
REMARKS: REF: NA	SA FMEA/	CIL REV	EW MI	EETING NOTE	ES (J.E. BO	_	•					

ASSESSMENT DATE: 1/21/88 ASSESSMENT ID: MPS-1062 NASA FMEA #: 0517-1								NASA <u>DATA:</u> BASELINE [] NEW [X]									
SUBSYSTE MDAC ID: ITEM:				MPS 106 LO2	2	K F	RE-	-PR	ESS	S (C		1D)	DISC	(PD	9)		
LEAD ANA	LYS	ST	:	K.A	. но	LDE	N										
ASSESSME	NT:	;												i		-	
	CR]		CAL LIGH			RE	DUI	NDA	NC	sc.	REENS	3			IL TEI	4	
	F	IDV	/FUI	NC		A			I	3		С					
NASA IOA	[2	/1R /3]	[P NA]	_	[] []	ia]	[F NA]	[X]	*
COMPARE	[N	/N]	[N]		[]	1]	[N]	[N]	
RECOMMEN	DAT	CIC	ons:	(If di	ff	ere	ent	fı	om	NASA)						
	[/]	[]		[]	[]] ADD)	/DI] ELE	TE)
* CIL RE	TEN	T	ON I	RATI	ONALE	E:	(Ii	f aj	[qc	.ica	ble)	AD:	EQUAT	ī Ē		1	
REMARKS:											IN		EQUAT			j	
THIS IOA SHOULD B								Y.	ro	THE	PREI	AU.	NCH P	IASE	. <u>•</u>	IT	- 1.55.r

ASSESSMENT ASSESSMENT NASA FMEA	' ID	:	MPS-10	63								SA DATA: ASELINE NEW	[x]		
SUBSYSTEM: MDAC ID: ITEM:	}		MPS 1063 LO2 TA	NK	C P	RE-PR	ES	ss	(ORB/	'GN	ID)	DISC (F	D9))			
LEAD ANALY	ST:		K.A. HOLDEN														
ASSESSMENT	r:																
CRITICALITY REDUNDANCY SCREEN				SCREE	SCREENS			CIL ITEM									
			1C		A			В			С						
NASA IOA	[2 [3	/1R /2R]]	P P]	[[F F]	[F P]	[X X]	*	
COMPARE	[N	/N]	[]	[]	[N]	[]		
RECOMMENDA	ATIC	ns:	(If	đi	Ĺff	erent	: 1	Ero	om NAS	SA))						
	[2	/1R]	[P]	[F]	[P] (AI		/DE		ETE)	
* CIL RET	ENTI	ON I	RATION	ALI	Ξ:	(If a	p) 1:	icable			DEQUATE DEQUATE	[]		
REMARKS: LOSS OF RI POSSIBLE I A SINGLE I REF: RI/I NOTES (J.)	et s even nas <i>i</i>	TRU T. CI	CTURAL L OF 1:	F	AII	LURE.	7	AL.	L RED	JN	DAI	NCY CANNO	TC	BI			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1064		NASA DATA: BASELINE NEW	
MDAC ID:	MPS 1064 LO2 TANK	PRE-PRESS (ORB/GND) DISC (P	D9)
LEAD ANALYST:	K.A. HOLI	DEN	The way To	
ASSESSMENT:				
CRITICALI FLIGHT HDW/FUR	ŗ	REDUNDANCY S	C	CIL ITEM
•				
NASA [3 /3 IOA [2 /1R] []	NA] [NA] P] [F]	[NA] [P]	[X]
COMPARE [N /N] []	и] [и]	[N]	[N]
RECOMMENDATIONS:	(If di	fferent from	NASA)	
[/] [] []	[] (AD	[D/DELETE)
* CIL RETENTION B	RATIONALE	: (If application		
			ADEQUATE INADEQUATE	[]
REMARKS: THIS RI/NASA ANAI REF: RI/NASA FMI	LYSIS APPI EA/CIL REV	LIES ONLY TO VIEW MEETING	EXTERNAL LEAKAG	E OF HELIUM.

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1064		NASA DATA: BASELINE [] NEW [X]				
MDAC ID:	MPS 1064 LO2 TAN	K PRE-PI	RESS (O	RB/GND) DISC	(PD9)		
LEAD ANALYST: K.A. HOLDEN							
ASSESSMENT:							
CRITICAL FLIGH	ITY	REDUNDA	ANCY SC	REENS	CIL ITEM		
HDW/FU	_	A	В	C			
NASA [2 /1R IOA [2 /1R] [P] P]	[F] [F]	[P] [P]	[X] * [X]		
COMPARE [/] []	[]	[]	[]		
RECOMMENDATIONS:	(If d	ifferen	t from	NASA)			
] []	[]	į j	[] (ADD/DELETE)		
* CIL RETENTION	RATIONAL	E: (If	applica	ble) ADEQUAT	יובי ר		
				INADEQUAT			
REMARKS: REF: RI/NASA CI NOTES (J.E. BORC	L OF 12- CHES).	23-87 A	ND NASA	. FMEA/CIL RE	VIEW MEETING		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/21/88 MPS-1071 NA	NASA DATA: BASELINE [] NEW [X]
	MPS 1071 LO2 GROUND FILL & DRAIN	(ORB/GND) DISCONNECT
LEAD ANALYST:	K.A. HOLDEN	en de la companya de La companya de la co
ASSESSMENT:		
CRITICAL FLIGHT HDW/FU	P .	NS CIL ITEM C
NASA [/ IOA [3 /3] [] [] [NA]	[] * [NA] []
COMPARE [N /N] [и] [и]	[N] []
RECOMMENDATIONS:	(If different from NASA	A)
. [/		[] [] (ADD/DELETE)
* CIL RETENTION F REMARKS: FAILURE MODE NOT		ADEQUATE []

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DA' BASELII NI	
SUBSYSTEM: MDAC ID: ITEM: (PD12)	1072	& DRAIN (ORB/GND)	DISCONNECT
LEAD ANALYST:	K.A. HOLDEN		
ASSESSMENT:			
CRITICAL FLIGH	ITY REDUNDAN	ICY SCREENS	CIL ITEM
	NC A	В С	112
NASA [1 /1 IOA [3 /3] [NA] [] [NA] [[NA] [NA] [NA] [NA]	[X] * []
COMPARE [N /N] [] [[N]
RECOMMENDATIONS:	(If different	from NASA)	
[/] [] [[] (ADD/DELETE)
	RATIONALE: (If ap	oplicable) ADEQUAT INADEQUAT	E [] E []
ITEM. IOA WORKS	HEET 1072 SHOULD	TS 22206 TO BE A C BE COMBINED WITH D RI/NASA CIL WORK	1073.

ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:	MPS-107			NASA DATA BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM: (PD12)	MPS 1073 LO2 GRO	OUND FILL	& DRAIN	(ORB/GND) D	ISCONNECT
LEAD ANALYST:	K.A. HC	DLDEN			
ASSESSMENT:					
CRITIC:		REDUNDANG	CY SCREE	NS	CIL ITEM
		A	В	С	IILH
NASA [1 /: IOA [1 /:	.] [NA] [NA] NA]	[NA] [NA]	[X] * [X]
COMPARE [/	,] (] []	[]	[]
RECOMMENDATIONS	: (If d	lifferent	from NAS	A)	
_ []] [ı ı]	[] (A	[] DD/DELETE)
* CIL RETENTION	RATIONAL	E: (If app) ADEQUATE INADEQUATE	[]
REMARKS: REF: RI/NASA 0 87.	CIL OF 12-	23-87 AND			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/22/88 MPS-1081 0406-4		NASA DATA BASELINI NEV	
SUBSYSTEM: MDAC ID: ITEM:	MPS 1081 LO2 OVERBO	ARD BLEED (ORB/GND) DISCO	ONNECT (PD13)
LEAD ANALYST:	K.A. HOLDE	N		
ASSESSMENT:				
CRITICAI FLIGH		DUNDANCY SCI		CIL ITEM
HDW/FU	INC A	В	С	
NASA [3 /3 IOA [3 /3] [NA] [NA	[NA] [NA]	[NA] [NA]	* [] []
COMPARE [/] [] []	[]	[]
RECOMMENDATIONS	: (If diff	erent from	NASA)	
[/] [] []	[]	[] ADD/DELETE)
* CIL RETENTION	RATIONALE:	(If applical	ble) ADEQUATE INADEQUATE	
REMARKS: REF: RI/NASA FI	MEA/CIL REVI	EW MEETING	NOTES (J.E. B	ORCHES).

ASSESSM ASSESSM NASA FM	ENT	' I	D:	MPS-	1081	A	NASA DATA: BASELINE [] NEW [X]						
SUBSYST MDAC ID ITEM:				MPS 1081 LO2		BOARD	BLE	ED (C	RB/GI	ND) D	ISCON	NECT	(PD13)
LEAD AN	ALY	ST	:	K.A.	HOL	DEN			· · · · ·			¹ 85	
ASSESSM	ENI	:											
		F	LIGH	ITY T NC	}			Y SCR				CIL ITEM	
NASA IOA	[1	/1 /3]	[]	NA] NA]	[]	NA] NA]	() ()	IA] IA]		[X]	*
COMPARE	(N	/N]	[]	[]	[]		[и]	
RECOMME	NDA	TI	ons:	(I	f di	ffere	nt f	rom N	ASA)				
	[/]	(] ,	[]	[]		[] D/DELE	
* CIL R		NT:	ION	RATIO	NALE	: (If	app.	licab	A	DEQU	ATE ATE		5.
REMARKS REF: R 87.		AS	A CI	L OF	12-2	3-87	AND 1	RI/NA	SA CI	L WOI	RKSHEI	ET OF	11-17-

	1/22/88 MPS-1082 0406-1		NASA DATA BASELINE NEW		
SUBSYSTEM: MDAC ID: ITEM:	MPS 1082 LO2 OVERBO	OARD BLEED (OF	RB/GND) DISCO	NNECT (PD13)	
LEAD ANALYST:	LYST: K.A. HOLDEN				
ASSESSMENT:					
CRITICAI FLIGH		EDUNDANCY SCRE	EENS	CIL ITEM	
HDW/FU		В	С	2244	
NASA [1 /1 IOA [3 /3] [NA] [NA	A] [NA] A] [NA]	[NA] [NA]	[X] *	
COMPARE [N /N] [] []	[]	[и]	
RECOMMENDATIONS:	(If diff	ferent from NA	ASA)		
[/] [] []	[]	[] ADD/DELETE)	
* CIL RETENTION	RATIONALE:	(If applicabl	Le) ADEQUATE INADEQUATE	•	
REMARKS: REF: RI/NASA CI	L OF 12-23-	-87 AND RI/NAS	~	•	

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:				TA: AMAGE, AMAGE NE [] AMAGE EW [X]
	MPS 1083 LO2 OVERBOARD	BLEED (OF	RB/GND) DIS	CONNECT (PD13)
LEAD ANALYST:	K.A. HOLDEN			
ASSESSMENT:				
CRITICAL FLIGH		DANCY SCRE	EENS	CIL ITEM
HDW/FU	_	В	C	IIII
NASA [1 /1 IOA [1 /1] [NA]] [NA]	[NA] [NA]	[NA] [NA]	[X] * [X] :
COMPARE [/] []	[]	[]	[]
RECOMMENDATIONS:	(If differe	nt from NA	SA)	
[/] []	[]	[]	[] (ADD/DELETE)
* CIL RETENTION	RATIONALE: (If	applicabl	ADEQUAT	• •
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87	AND RI/NAS	INADEQUAT	E [] SHEET OF 11-17-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1084	NASA DATA: BASELINE [] NEW [X]					
MDAC ID:	MPS 1084 LO2 OVERBOARD BI						
LEAD ANALYST:	K.A. HOLDEN	K.A. HOLDEN					
ASSESSMENT:							
CRITICAI FLIGH	ITY REDUNDAN	NCY SCREENS	CIL ITEM				
	INC A	В С	± ± 4/4 ±				
NASA [2 /1F IOA [3 /2F	R] [P] R] [P]	[F] [P] [P] [P]	[X] * []				
COMPARE [N /N] []	[иј [ј	[N]				
RECOMMENDATIONS:	(If different	from NASA)					
[/] []	[] []	[] ADD/DELETE)				
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []							
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87 AN	D RI/NASA CIL WORKSH	HEET OF 11-17-				

ASSESSMENT ID: NASA FMEA #:	MPS-1085		BASELINE [] NEW [X]				
MDAC ID:		D BLEED (ORB/	'GND) DISCON	NNECT (PD13)			
LEAD ANALYST:	K.A. HOLDEN						
ASSESSMENT:							
CRITICALI FLIGHT		NDANCY SCREEN	ıs	CIL ITEM			
	IC A	В	C	TIEM			
NASA [2 /1R IOA [2 /1R] [P]] [P]	[F] [[P] [P] P]	[X] *			
COMPARE [/] []	[11]]	[]			
RECOMMENDATIONS:	(If differ	ent from NASA	.)				
[/] []	[] [] (AI	[DD/DELETE)			
* CIL RETENTION F	RATIONALE: (I		ADEQUATE NADEQUATE	[]			
REMARKS: THIS IOA WORKSHEE CIL OF 12-23-87 A		COMBINED WITH	1084. REF	: RI/NASA			

: 1/22/88 MPS-1091 0516-2	BASEL	
MPS 1091 GO2 PRESSURI	ZATION MANIFOLD TEST	POINT COUPLING
K.A. HOLDEN		
HT	INDANCY SCREENS B C	CIL ITEM
	[NA] [NA] [NA] [NA]	[X] * [X]
] []	[] []	[]
: (If differ	cent from NASA)	
] []	[] []	[] (ADD/DELETE)
·	ADEQUA INADEQUA	TE []
	MPS 1091 GO2 PRESSURI K.A. HOLDEN LITY REDU HT UNC A] [NA]] [NA]] [NA] ; (If differ] [] RATIONALE: (I	MPS-1091 0516-2 MPS 1091 GO2 PRESSURIZATION MANIFOLD TEST K.A. HOLDEN LITY REDUNDANCY SCREENS HT UNC A B C [NA]] [] [] [] : (If different from NASA)

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/22/88 MPS-1092 0516-1	:	NASA DATA: BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM: (PD15)	MPS 1092 GO2 PRES	SURIZATION MANI	FOLD TEST PO	INT COUPLING
LEAD ANALYST:	K.A. HOI	LDEN		
ASSESSMENT:				
FLIGH	T	REDUNDANCY SCRE	ENS C	CIL ITEM
	NC			
NASA [2 /1R IOA [1 /1] [F] [F] NA] [NA]	[F] [NA]	[X] *
COMPARE [N /N] [N] [N]	[и]	[]
RECOMMENDATIONS:	(If di	fferent from NA	SA)	
[1 /1] [NA] [NA]	[NA]	[] DD/DELETE)
* CIL RETENTION	RATIONALI	E: (If applicabl	e) ADEQUATE INADEQUATE	
REMARKS: FAILURE MODE IS SEAL LEAKAGE. T REVISED TO REFLE REF: RI/NASA CI NOTES (J.E. BORO	EXTERNAL HIS FMEA CT THE SC	SHOULD BE DROPP SENARIO DESCRIBE	ED, OR ITS F	AILURE MODE

ASSESSMEN ASSESSMEN NASA FMEA	T ID:		3		NASA DATA BASELINE NEW		
SUBSYSTEM MDAC ID: ITEM: (PD15)		MPS 1093 GO2 PRES					
LEAD ANAI	YST:	K.A. HO	LDEN				
ASSESSMEN	T:						
c	RITICAL		REDUNDA	ANCY SCRE	ENS	CIL ITEM	
	FLIGHT HDW/FU		A	В	С	IIEM	
NASA IOA	[/ [2 /2] [NA]	[] [NA]	[] [NA]	[] * [x]	
COMPARE	[N /N] [N]	[и]	[N]	[N]	
RECOMMENI	DATIONS:	(If d	ifferent	t from NA	SA)		
-	[1 /1] [NA]	[NA]	[NA]	[A] DD/DELETE)	
* CIL RET	TENTION	RATIONAL	E: (If a	applicabl	e) ADEQUATE INADEQUATE	[]	
REMARKS: COMBUSTION OF THE COMPONENT WILL ALLOW ESCAPE OF 02, CREATING A FIRE/EXPLOSION HAZARD THAT CAN DESTROY THE VEHICLE.							

ASSESSME ASSESSME NASA FME		1/22/88 MPS-109 NA			NASA DATA BASELINE NEW	
SUBSYSTE MDAC ID: ITEM: (PD15)	• •	MPS 1094 GO2 PRE	SSURIZ <i>I</i>	ATION MAN	FOLD TEST PO	OINT COUPLING
LEAD ANA	LYST:	K.A. HO	LDEN			
ASSESSME	ENT:					
	CRITICAL FLIGH HDW/FU			B	E ENS C	CIL
NASA IOA	[/ /1] [NA]	[NA]	[] [NA]	[]*. [X]
COMPARE	[N /N] [N]	[N]	[и]	[N]
RECOMMEN	DATIONS:	(If d	ifferer	nt from NA	ASA)	
-	[/] []	[]	[] (A	[] .DD/DELETE)
* CIL RE		RATIONAL	E: (If	applicabl	ADEQUATE INADEQUATE	
		ET SHOUL	D BE CO	MBINED WI	TH 1093.	

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/22/88 MPS-1101 NA	NASA DA BASELI M	
SUBSYSTEM: MDAC ID: ITEM:	MPS 1101 LO2 PREVALVE	(PV1, 2, 3)	
LEAD ANALYST:	K.A. HOLDEN		
ASSESSMENT:			
CRITICAL FLIGH	T	NDANCY SCREENS	CIL ITEM
HDW/FU	NC A	ВС	
NASA [/ IOA [3 /3] []] [NA]	[] [] [AN] [AN]	[] *
COMPARE [N /N] [N]	[и] [и]	[]
RECOMMENDATIONS:	(If differe	ent from NASA)	
[3 /3] [NA]	[NA] [NA]	[] (ADD/DELETE
* CIL RETENTION	RATIONALE: (If	f applicable) ADEQUA' INADEQUA'	
REMARKS: THIS IOA ANALYSI	S ADDRESSES A	PRELAUNCH FAILURE TO	O OPEN.

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/22/88 MPS-110 0401-3			NASA DATA BASELINE NEW	[X]
SUBSYSTEM: MDAC ID: ITEM:	MPS 1102 LO2 PRE	CVALVE (PV)	L, 2, 3)		
LEAD ANALYST:	K.A. HO	LDEN			
ASSESSMENT:					
CRITICAI FLIGH	T	REDUNDANC			CIL
HDW/FT	INC	A	В	C	
NASA [1 /1 IOA [2 /2] [NA] [NA] [NA] NA]	[X] * [X]
COMPARE [N /N] [] [] []	[]
RECOMMENDATIONS:	(If d	ifferent f	from NASA)	ı	
[/] [j [j [] (AI	[] DD/DELETE)
* CIL RETENTION	RATIONAL	E: (If app	•	ADEQUATE NADEQUATE	
REMARKS: REF: RI/NASA CI	L OF 12-	23-87 AND	RI/NASA (CIL WORKSHE	CET OF 12-15-

ASSESSME ASSESSME NASA FME	NT I	D:	MPS-	-1103					NASA DA BASEL	INE]	
SUBSYSTE MDAC ID:			MPS 1103 LO2										
LEAD ANA	LYSI	! :	K.A.	. HOLD	EN								
ASSESSME	NT:												
				R	EDUNI	ANC'	Y SCR	EENS			CIL		
		LIGH W/FU	INC	A		1	В		С		111	Pi	
NASA IOA	[]	/1]	[N	A] A]	[]	NA] NA]	[NA] NA]		x] x]]	*
COMPARE	[/]	[]	[]	[]		[]	
RECOMMEN	DATI	ONS:	: (]	[f dif	ferer	nt f	rom N	'ASA)					
	[/]	Ţ]	[]	[]	(A	[DD/D	ELI	ETE)
* CIL RE	TENT	TION	RATIO	ONALE:	(If	app	licab		ADEQUA]	
REMARKS: REF: RI	/NAS	SA CI	L OF	12-23	-87 <i>I</i>	AND :	RI/NA	SA C	IL WOR	KSH	EET	OF	12-15-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1104	NASA DAT BASELIN NE	
SUBSYSTEM: MDAC ID: ITEM:	MPS 1104 LO2 PREVALVE	(PV1, 2, 3)	
LEAD ANALYST:	K.A. HOLDEN		
ASSESSMENT:			
		DANCY SCREENS	CIL
FLIGHT HDW/FUI		ВС	ITEM
NASA [3 /1R IOA [2 /1R] [P]] [P]	[NA] [P] [P] [P]	[
COMPARE [N /] []	[и] [и]	[N]
RECOMMENDATIONS:	(If differe	nt from NASA)	
[/] []	[] []	[] ADD/DELETE)
* CIL RETENTION I	RATIONALE: (If		
D		ADEQUATE INADEQUATE	
REMARKS:	1 DUDIGG DDIT		
ADDITONAL RELIEF	CAPABILITY IS	EF VALVE AS WELL AS VER PROVIDE BY THE HPOT	
FUNCTION IS CONST	L WORKSHEET OF		
were welvice of	" "OT/T/DITEDT OF	TO 44 0/1	

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1105		NASA DATA: BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM:	MPS 1105 LO2 PREVALVE	(PV1, 2, 3)		
LEAD ANALYST:	K.A. HOLDEN			•
ASSESSMENT:				
CRITICAL FLIGH	ITY REDUNI	DANCY SCREEN	S	CIL ITEM
=	NC A	В	С	
NASA [3 /1R IOA [3 /1R	[P] [P]	[F] [[P] [P] P]	[X] *
COMPARE [/] []	[и] [1	[N]
RECOMMENDATIONS:	(If differe	nt from NASA	.)	
[/] []	[] [] (A)	[] DD/DELETE)
* CIL RETENTION	RATIONALE: (If		ADEQUATE NADEQUATE	
REMARKS: POSITION SWITCH FAILURE IS CAUSE SCREEN B SHOULD REF: RI/NASA CI 87.	ED BY A PIECE P	ART STRUCTUR	KAL FAILURE	. THEREFORE,

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1106		NASA DATA BASELINE NEW	
MDAC ID:	MPS 1106 LO2 PREVALVE	(PV1, 2, 3)		
LEAD ANALYST:	K.A. HOLDEN			
ASSESSMENT:				
CRITICAL FLIGH	TY REDUN	DANCY SCREEN	5	CIL ITEM
HDW/FUI	NC A	В	c	
NASA [1 /1 IOA [3 /3] [NA]] [NA]	[NA] [[NA] [NA] NA]	[X] * []
COMPARE [N /N] []	[] []	[N]
RECOMMENDATIONS:	(If differen	nt from NASA)	
] []	[] [] (AI	[] DD/DELETE)
* CIL RETENTION I	RATIONALE: (If	applicable)	30000300	
		II	ADEQUATE NADEQUATE	
REMARKS: IOA ANALYSIS ADDI	RESSED FAILURE	TO CLOSE FOI	LLOWING MPS	DUMP ONLY.
THIS WORKSHEET STREF: RI/NASA CIT	HOULD BE COMBIN	NED WITH 1108	3.	
87.				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1107	7		NASA DATA: BASELINE NEW	
MDAC ID:	MPS 1107 LO2 PREV	VALVE (PV	1, 2, 3)		
LEAD ANALYST:	K.A. HOI	LDEN			
ASSESSMENT:					
CRITICAI FLIGH		REDUNDAN	CY SCREEN	S	CIL ITEM
HDW/FU	INC	A	В	С	
NASA [1 /1 IOA [1 /1] [NA] [NA] [NA] [NA] [NA] NA]	[X] *
COMPARE [/] [] [) [1	[]
RECOMMENDATIONS:	(If d	ifferent	from NASA)	
[/] [] [] [] (A	[] DD/DELETE)
* CIL RETENTION	RATIONALI	E: (If ap		ADEQUATE NADEQUATE	•
REMARKS: REF: RI/NASA CI	L OF 12-	23-87 AND	RI/NASA	CIL WORKSH	EET OF 12-15

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1108	3		NASA DATA: BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM:	1108	ALVE (PV1		a. Zu E	and a second second
LEAD ANALYST:	K.A. HOI	LDEN			
ASSESSMENT:					
CRITICAL: FLIGHT		REDUNDANC	Y SCREEN	S	CIL ITEM
HDW/FUI		A	В	Č TO VETO ME SOMETIME	
NASA [1 /1 IOA [1 /1] [NA] [NA] [NA] [NA] [NA] NA]	[X] *
COMPARE [/] [] [] []	[]
RECOMMENDATIONS:	(If di	fferent f	rom NASA)	
[/] [] [] [[] D/DELETE)
* CIL RETENTION I	RATIONALE	: (If app	licable)		
			II	ADEQUATE NADEQUATE	
REMARKS: REF: RI/NASA CII 87.	L OF 12-2	3-87 AND	RI/NASA (CIL WORKSHE	ET OF 12-15-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/25/88 MPS-1121 0414-2			NASA DATA BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM:	MPS 1121 LO2 FEEDI	LINE REL	EF SHUT	OFF VALVE (PV7)
LEAD ANALYST:	K.A. HOLI	DEN			
ASSESSMENT:					
CRITICAL FLIGH		REDUNDAN	CY SCREE	NS	CIL ITEM
HDW/FU		A	В	С	
NASA [3 /3 IOA [3 /3] [1	NA] [NA] [NA] NA]	[NA] [NA]	[] *
COMPARE [/] [] [1	[]	[]
RECOMMENDATIONS:	(If di	fferent :	from NAS	A)	
[/] [] []	[] (A	[.DD/DELETE
* CIL RETENTION REMARKS:	RATIONALE	: (If ap	-) ADEQUATE INADEQUATE	•
REF: RI/NASA FM	MEA/CIL RE	VIEW MEE	TING NOT	ES.	

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/25/88 MPS-1122 0414-3		NASA DATA: BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM:	MPS 1122 LO2 FEEDLI	INE RELIEF SHUTO	FF VALVE (F	P V7)
LEAD ANALYST:	K.A. HOLDE	EN		
ASSESSMENT:				
CRITICAL: FLIGHT		EDUNDANCY SCREEN	S	CIL ITEM
HDW/FUI	NC A	. B	C	
NASA [2 /1R IOA [3 /2R] [P] [P] [F] [] [P] [P] P]	[X] * []
COMPARE [N /N] [] [N][1	[N]
RECOMMENDATIONS:	(If diff	ferent from NASA)	
[/] [] [] [[] D/DELETE)
* CIL RETENTION I	RATIONALE:		ADEQUATE NADEQUATE	[]
REMARKS: ESCAPING LO2 IS OREF: RI/NASA CII		A CRITICALITY 1-87 AND RI/NASA		

ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:			NASA DAT BASELIN NI	
SUBSYSTEM: MDAC ID: ITEM:	MPS 1123 LO2 FEEDLI	NE RELIEF SHO	UTOFF VALVE	(PV7)
LEAD ANALYST:	K.A. HOLDE	N		
ASSESSMENT:				
CRITICA FLIG		DUNDANCY SCRI	EENS	CIL ITEM
HDW/F		В	С	* * ***
NASA [1 /1 IOA [1 /1] [NA] [NA] [NA]] [NA]	[NA] [NA]	[X] *
COMPARE [/] [] []	[]	[]
RECOMMENDATIONS	: (If diff	erent from N	ASA)	
[/] [] []	[]	[] (ADD/DELETE)
* CIL RETENTION	RATIONALE:	(If applicab	le) ADEQUATI INADEQUATI	
REMARKS: REF: R/NASA CI	L OF 12-23-8	7 AND RI/NAS	A CIL WORKS	HEET OF 8-23-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-112			NASA DATA: BASELINE NEW	: [
SUBSYSTEM: MDAC ID: ITEM:	MPS 1124 LO2 FEE	DLINE RELI	EF SHUT	OFF VALVE (I	?V7)
LEAD ANALYST:	K.A. HO	LDEN			
ASSESSMENT:					
CRITICAI FLIGH	ITY IT	REDUNDANO	CY SCREE	NS	CIL ITEM
	NC	A	В	С	11211
NASA [3 /1F IOA [1 /1	?] [] [P] [NA] [P] ([P] [NA]	[] * [x]
COMPARE [N /N] [N] [N]	[и]	[N]
RECOMMENDATIONS:	(If d	ifferent f	rom NASA	A)	
[/] [] [] [[] (AI	[] DD/DELETE)
* CIL RETENTION	RATIONAL	E: (If app	·	ADEQUATE	[]
REMARKS: REDUNDANCY EXIST MANIFOLD PRESSUR REF: RI/NASA CI 87.	E INDICA	rors suppo	ANIFOLD	IF THIS FAI	LURE OCCURS.

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-113			NASA DATA: BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM:	MPS 1131 LO2 OUT	BOARD FIL	L AND DRA	AIN VALVE (I	PV9)
LEAD ANALYST:	K.A. HO	LDEN			
ASSESSMENT:					
CRITICA FLIG		REDUNDAN	CY SCREE	NS	CIL ITEM
HDW/F	INC	A	В	С	
NASA [2 /1] IOA [1 /1] [P] [NA] [F] NA]	[P] [NA]	[X] * [X]
COMPARE [N /N] [и] [N]	[и]	[]
RECOMMENDATIONS	(If d	ifferent	from NAS	A)	
[3 /1]	₹] [P] [P]	[P] (A)	[D] DD/DELETE)
* CIL RETENTION	RATIONAL	E: (If ap		ADEOUATE	[]
DEWI DWG .			:	INADEQUATE	ĹĴ
REMARKS: THIS IOA WORKSH CRITICALITY WAS NASA FAILURE MOINERT HAS NO EF	DRIVEN B DE WAS FA	Y THE FAI IL TO OPE	LURE TO I	REMAIN OPEN URE TO OPEN	, WHILE THE FOR MPS

RUPTURE. REF: RI/NASA CIL OF 12-23-87.

ASSESSMI ASSESSMI NASA FMI	ENT :	ID:	1/25 MPS- 0311	-1131A		nas. Ba	A DATA: ** SELINE [NEW [
SUBSYSTI MDAC ID: ITEM:			MPS 1131 LO2		D FILL AN	D DRAIN V	ALVE (PV9))
LEAD ANA	ALYS'	r:	K.A.	HOLDEN				
ASSESSMI	ENT:							
				RED	undancy s	CREENS	CI	L EM
		FLIGH DW/FU		A	В	С		LM
NASA IOA	[1 /1 1 /1]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[x] * x]
COMPARE	[/]	[]	[]	[]	. [1
RECOMME	NDAT:	ions:	(1	f diffe	rent from	NASA)		
	[/]	[]	[]	[]	[(ADD/] 'DELETE)
* CIL RI	ETEN'	LÍOÑ	RATIO	NALE: (If applic	able) ADE	QUATE [QUATE []
REMARKS REF: RI,		A CII	OF 1	L2-23-87	AND RI/N			OF 12-14-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1132	2	NASA DATA BASELINA NEV	= :
MDAC ID:	MPS 1132 LO2 OUTE	BOARD FILL A	ND DRAIN VALVE	(PV9)
LEAD ANALYST:	K.A. HOL	LDEN		
ASSESSMENT:				
CRITICAL FLIGH		REDUNDANCY S	SCREENS	CIL ITEM
HDW/FU	NC	A B	С	
NASA [1 /1 IOA [1 /1] [NA] [NA NA] [NA] [NA]] [NA]	[X] * [X]
COMPARE [/] [) [] []	[]
RECOMMENDATIONS:	(If di	ifferent from	n NASA)	
1 1] [) [] []	[] ADD/DELETE)
* CIL RETENTION	RATIONALE	E: (If applio	cable) ADEQUATE INADEQUATE	
REMARKS: REF: RI/NASA CI	L OF 12-2	23-87 AND RI,	/NASA CIL WORKS	HEET OF 12-14-

ASSESSME ASSESSME NASA FME	NT I	D:	MPS-1	133					NASA BASE	DATA: LINE NEW	[x]	
SUBSYSTE MDAC ID: ITEM:			MPS 1133 LO2 O	JTE	BOARD	FILL	AND	DRAI	N VAL	VE (I	₽ V ⊆)		
LEAD ANA	LYST	:	K.A.	IOF	DEN									
ASSESSME	NT:													
,	F	LIGH'	ITY I NC				Y SCR B		c		CI	IL PEN		
NASA IOA	[3	/3 /3	.]]	NA] NA]	[NA] NA]	[NA] NA]		[X]	*
COMPARE	[/]	[]	[]	[]		[]	
RECOMMEN	DATI	ons:	(If	di	ffere	nt f	rom N	IASA)						
	[/]	[1	[]	[]		[DD/			ETE)
* CIL RE	TENT:	ION 1	RATIONA	ALE	: (If	app	licab		ADEQU ADEQU	ATE ATE	[.i]	
REMARKS: THE RI/N TAL ABOR REF: RI	TS.	IOA	CONCU	RS	WITH '	THIS	RESU	RITI	CALIT	Y FOR	F	TI	S	***

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1134		NASA DATA BASELINE NEW	
MDAC ID:	MPS 1134 LO2 OUTBO	DARD FILL A	ND DRAIN VALVE (PV9)
LEAD ANALYST:	K.A. HOLD	EN		
ASSESSMENT:				
FLIGH	T	REDUNDANCY		CIL ITEM
HDW/FU	NC A	В	С	
NASA [2 /1R IOA [3 /2R] [P	P] [F] [P]] [P]	[X] * []
COMPARE [N /N] [] [N] []	[и]
RECOMMENDATIONS:	(If dif	ferent fro	om NASA)	
[/] [] [] [] (A	[] .DD/DELETE)
* CIL RETENTION	RATIONALE:	(If appli	cable)	
		`	ADEQUATE INADEQUATE	[]
REMARKS: THE RI/NASA ANAL	YSIS IDENT	rified A 1/	1 CRITICALITY FO	
TAL ABORTS. IOA REF: RI/NASA CI 87.	CONCURS W	VITH THIS R	ESULT.	

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			NASA DATA BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM:	MPS 1135 LO2 OUTBO	ARD FILL AN	D DRAIN VALVE (
LEAD ANALYST:	K.A. HOLD	EN		
ASSESSMENT:				
CRITICAL: FLIGH		EDUNDANCY S	CREENS	CIL ITEM
HDW/FU		В	C	TIEM
NASA [1 /1 IOA [2 /1R] [NZ] [P	A] [NA]] [P]	[NA] [P]	[X] * [X]
COMPARE [N /N] [N] [N]	[N]	[]
RECOMMENDATIONS:	(If dif	ferent from	NASA)	
[/] [] []	[] (A	[] DD/DELETE)
* CIL RETENTION 1	RATIONALE:	(If applica	able) ADEQUATE INADEQUATE	[]
REMARKS: LOSS OF VEHICLE O	CAN OCCUR I	UPON FIRST	~	. ,
REF: RI/NASA CI:	L OF 12-23	-87 AND RI/1	NASA CIL WORKSH	EET OF 12-14

ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:	: 1/25/88 MPS-113 0311-6		NASA DATA BASELINI NEV	
SUBSYSTEM: MDAC ID: ITEM:	MPS 1136 LO2 OUT	IBOARD FILL A	ND DRAIN VALVE	(PV9)
LEAD ANALYST:	к.а. но	OLDEN		
ASSESSMENT:				
		REDUNDANCY	SCREENS	CIL ITEM
FLIG HDW/F		A B	С	IIIM
NASA [3 /1 IOA [3 /3	R]	[P] [F [NA] [NA	[P] [NA]	[X] *
COMPARE [/N]	[и] [и] [N]	[N]
RECOMMENDATIONS	: (If	different fro	om NASA)	
[/]	[] [] []	[ADD/DELETE)
* CIL RETENTION RATIONALE: (If applicable)				
			ADEQUATE INADEQUATE	•
REMARKS: LOSS OF ALL REDUNDANCY WILL CAUSE RUPTURE OF THE MANIFOLD. REF: RI/NASA FMEA/CIL REVIEW MEETING NOTES.				

ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:	MPS-1137 0311-4		NASA DAT BASELIN NE	
SUBSYSTEM: MDAC ID: ITEM:	MPS 1137 LO2 OUTBOARD	FILL AND I	DRAIN VALVE	(PV9)
LEAD ANALYST:	K.A. HOLDEN			
ASSESSMENT:				
CRITICAI FLIGH		DANCY SCRE	EENS	CIL ITEM
HDW/F		В	C	TIEM
NASA [2 /11 IOA [3 /3	R] [P]] [NA]	[F] [NA]	[P] [NA]	[X] *
COMPARE [N /N] [N]	[N]	[и]	[N]
RECOMMENDATIONS:	(If differe	ent from NA	ASA)	
[/] []	[]	[] ([] ADD/DELETE)
* CIL RETENTION	RATIONALE: (If	applicabl	ADEQUATE	
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87	AND RI/NAS	INADEQUATE	. ,

ASSESSME ASSESSME NASA FME	NT ID:	: 1/25/ MPS-1 0310-	151	NASA DATA: BASELINE [] NEW [X]								
SUBSYSTE MDAC ID:	M:	MPS 1151 LO2 I	NBOARD	FILL AND DE	RAIN VALVE (PV10)						
LEAD ANA	LYST:	K.A.	HOLDEN									
ASSESSME	NT:											
	CRITICA FLIG		REDU	NDANCY SCRI		CIL ITEM						
	HDW/F	UNC	A	В	С							
NASA IOA	[3 /1 [1 /1	R]	[P] [NA]	[P] [NA]	[P] [NA]	[
COMPARE	[N /N]	[N]	[N]	[N]	[N]						
RECOMMEN	DATIONS	: (If	differ	ent from NA	ASA)							
	[/]	[]	[]	[] ([] ADD/DELETE)						
* CIL RE	TENTION	RATION	ALE: (I	f applicab	le) ADEQUATE							
					INADEQUATE							
REMARKS: THIS IOA		IS ADDR	ESSED F		AILUES ONLY.							

CRITICALITY WAS DRIVEN BY THE FAILURE TO REMAIN OPEN, WHILE THE NASA FAILURE MODE WAS FAIL TO OPEN. FAILURE TO OPEN FOR MPS INERT HAS NO EFFECT. LOSS OF ALL REDUNDNACY MAY CAUSE MANIFOLD RUPTURE. REF: RI/NASA CIL WORKSHEET OF 12-10-87.

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1151A		BASELINE [] NEW [X]						
MDAC ID:	MPS 1151 LO2 INBOARD	FILL AND DR	AIN VALVE (P	V10)					
LEAD ANALYST:	K.A. HOLDEN								
ASSESSMENT:									
CRITICAI FLIGH HDW/FU		UNDANCY SCRE B	ENS C	CIL ITEM					
NASA [1 /1 IOA [1 /1] [NA]] [NA]	[NA] [NA]	[NA] [NA]	[X] * [X]					
COMPARE [/] []	[]	[]	[]					
RECOMMENDATIONS:	(If diffe	rent from NA	SA)						
Ţ ,] []	[]	[] (A	[] DD/DELETE)					
* CIL RETENTION	RATIONALE: (If applicabl	e) ADEQUATE INADEQUATE	[]					
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-8	7 AND RI/NAS	A CIL WORKSH	EET OF 12-14-					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1152	2		NASA DATA: BASELINE [] NEW [X]					
SUBSYSTEM: MDAC ID: ITEM:	MPS 1152 LO2 INBO	DARD FILL	IN VALVE (P	V10)					
LEAD ANALYST:	K.A. HO	K.A. HOLDEN							
ASSESSMENT:									
CRITICAL FLIGH		REDUNDANG	CY SCREEN	1 S	CIL ITEM				
	NC	A	В	C					
NASA [1 /1 IOA [1 /1] [NA] [NA] [NA] NA]	[NA] [NA]	[X] *				
COMPARE [/] [] []	[]	[]				
RECOMMENDATIONS:	(If d	ifferent :	from NAS	A)					
[/] [] []	[] (A)	[] DD/DELETE)				
* CIL RETENTION	RATIONAL	E: (If ap) ADEQUATE INADEQUATE	[]				
REMARKS: REF: RI/NASA CI 87.	L OF 12-	23-87 AND	RI/NASA	CIL WORKSH	EET OF 12-14-				

ASSESSME ASSESSME NASA FME	NT I	D:	1/25/ MPS-1 0310-	153	3	NASA DATA: BASELINE [] NEW [X]						
SUBSYSTEMDAC ID:			1153	NBC	ARD F	ILL	AND I	DRAIN	VALVI	P(P)	/10)
LEAD ANA	LYSI	2:	K.A.	ноі	LDEN							
ASSESSME	NT:											
(ICAL LIGH	ITY P		REDUN	DANC	Y SCF	REENS	5		CII	 '
	ΗĽ	W/FU	NC		A		В		С			
NASA IOA	[3	3 /3]	[NA] NA]	[NA] NA]] [NA] NA]		[] *]
COMPARE	ſ	/]	[]	[]	[]		[]
RECOMMEN	DATI	ons:	(If	di	.ffere	nt f	rom N	IASA)				
	[/]	[]	[]	[1	(AI] DELETE)
* CIL RE	TENT	ION	RATION	ALE	: (If	app	licab		ADEQU <i>I</i> IADEQU <i>I</i>	ATE ATE	[]
REF: RI	/NAS	A FM	EA/CIL	RE	VIEW :	MEET	ING N	OTES	i.			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/25/88 MPS-115 0310-7		NASA DATA: BASELINE [] NEW [X]							
MDAC ID:	MPS 1154 LO2 INB	OARD FILL	AND DRAII	N VALVE (P	V10)					
LEAD ANALYST:	K.A. HO	LDEN								
ASSESSMENT:										
CRITICAL FLIGH		REDUNDANC	Y SCREENS		CIL ITEM					
HDW/FU	NC	A	В	С						
NASA [3 /1R IOA [3 /3] [P] [NA] [F] [NA] [P] NA]	[X] *					
COMPARE [/N] [и] [и ј [N]	[N]					
RECOMMENDATIONS:	(If d	lifferent f	rom NASA)						
[/] [] [,1 . [] (A	[] .DD/DELETE;					
* CIL RETENTION	RATIONAL	E: (If app	·	ADEQUATE NADEQUATE						
REMARKS: LOSS OF ALL REDUNDANCY CAN CAUSE RUPTURE OF THE MANIFOLD. REF: RI/NASA FMEA/CIL REVIEW MEETING NOTES.										

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1155		NASA DATA: BASELINE [] NEW [X]							
MDAC ID:	MPS 1155 LO2 INBOARI	FILL AND	DRAIN VALVE	(PV10)						
LEAD ANALYST:	K.A. HOLDE	1								
ASSESSMENT:										
CRITICAL: FLIGH	ITY REI	DUNDANCY SC	REENS	CIL ITEM						
	NC A	В	С	-						
NASA [1 /1 IOA [1 /1] [NA] [NA] [NA]] [NA]	[NA] [NA]	[X] * [X]						
COMPARE [/	1 (] []	[]	[]						
RECOMMENDATIONS:	(If diffe	erent from	NASA)							
[/	1 [,]] []	[]	[] (ADD/DELETE)						
* CIL RETENTION	RATIONALE:	(If applica	ble) ADEQUA' INADEQUA'							
REMARKS: REF: RI/NASA CI: 87.	L OF 12-23-	37 AND RI/N	ASA CIL WOR	KSHEET OF 12-9-						

ASSESSME ASSESSME NASA FME	NT ID:	1/25/8 MPS-11 NA			NASA DATA: BASELINE [] NEW [X]					
SUBSYSTE MDAC ID: ITEM:		MPS 1156 LO2 IN						(PV10))	
LEAD ANA	LYST:	K.A. H	HOLD	EN						
ASSESSME	NT:									
	CRITICAL FLIGH		R	EDUND	ANCY	SCRI	EENS	CII		
	HDW/FU	NC	A		B	\$	С			
NASA IOA	[/ [3 /2R]	[[P]	[[P]	[] [P]	[] *	
COMPARE	[N /N	J	[N]	[N]	[א]	C]	
RECOMMEN	DATIONS:	(If	dif:	feren	t fr	om NA	ASA)			
	[/	3	[]	[]	[]	[(ADD/I] DELETE)	
* CIL RE	TENTION	RATIONA	ALE:	(If	appl	icabl	.e) ADEQUAT INADEQUAT		ļ	
REMARKS:	ANATVCT	e enout	ים ח.		DTNE	ה שדי	TNADEQUALIN TO	•	j	

ASSESSME ASSESSME NASA FME	NT	ID:		1157	NASA DATA: BASELINE [] NEW [X]							
SUBSYSTE MDAC ID: ITEM:			MPS 1157 LO2							0)		
LEAD ANA	LYS	T:	K.A.	HOLDE	en							
ASSESSME	ENT:											
		TICAL FLIGH		RI	EDUNĎAN	CY SCR	EENS			IL TEM	Ī	
				A		В	C	2				
NASA IOA	[1 /1 1 /1]	[N2	A] [A] [NA]	1] 1]	NA] NA]	ָר נ	X X]	*
COMPARE	[/]	ί] [1,]	[]	
RECOMMEN	IDAT	ions:	(1	f diff	ferent	from N	ASA)					
	[/]	[] [1	(]] ADE))/DI		TE)
* CIL RI	ETEN	TION	RATIO	NALE:	(If ap	plicab	1	ADEQU <i>A</i> ADEQU <i>A</i>]	
REMARKS: REF: RI	: [/NA	SA CI	L OF	12-23	-87 AND	RI/NA	SA C	IL WOF	RKSHEE	T C	F	12-14-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1171		NASA DATA: BĀSELINE NEW]			
SUBSYSTEM: MDAC ID: ITEM:	MPS 1171 LO2 BLE	MPS 1171 LO2 BLEED SHUTOFF VALVE (PV19)						
LEAD ANALYST:	EAD ANALYST: K.A. HOLDEN							
ASSESSMENT:								
CRITICAL FLIGH		REDUNDANG	CY SCREENS	5	CIL ITEM	,		
HDW/FU	nc	A	В	С		•		
NASA [3 /3 IOA [3 /3] [NA] [NA] [NA] [AN] [AN	NA] NA]	[X] *		
COMPARE [/] [] [] []	[]		
RECOMMENDATIONS:	(If d	ifferent 1	from NASA					
[/] [] [] [] (Al	[DD/DE] LETE)		
* CIL RETENTION	RATIONALI	E: (If app		ADEQUATE NADEQUATE	[]		
REMARKS: THE RI/NASA ANAL (PRELAUNCH). IO 12-23-87 AND RI/	A CONCURS	S WITH TH	IS RESULT	REF: R	A PA I/NAS	D ABORT A CIL OF		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1172			NASA DATA: BASELINE [] NEW [X]					
	MPS 1172 LO2 BLEI								
LEAD ANALYST: K.A. HOLDEN									
ASSESSMENT:									
CRITICAL: FLIGH		REDUNDANC	Y SCREEN	S	CIL ITEM				
HDW/FU		A	В	C					
NASA [1 /1 IOA [3 /3] [NA] [NA] [NA] [NA] [NA] NA]	[X] * []				
COMPARE [N /N] [] [] [1	[N]				
RECOMMENDATIONS:	(If d	ifferent f	rom NASA	.)					
[/) [] [] [[DD/DELETE)				
* CIL RETENTION	RATIONALI	E: (If app		ADEQUATE NADEQUATE	[]				
REMARKS: LO2 OVERBOARD LE REF: RI/NASA CI 87.	AKAGE IS L OF 12-	DEFINED T 23-87 AND	O BE A 1 RI/NASA	/1 CRITICAI CIL WORKSHE	LITY. EET OF 11-13-				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		3		NASA DATA: BASELINE NEW				
SUBSYSTEM: MDAC ID: ITEM:	MPS 1173 LO2 BLEE							
LEAD ANALYST:	K.A. HOI	LDEN						
ASSESSMENT:								
CRITICAL FLIGH		REDUNDAN	CY SCREE	NS	CIL ITEM			
HDW/FU		A	В	C				
NASA [2 /1R IOA [3 /2R	[P] [P] [F] P]	[P] [P]	[X] *			
COMPARE [N /N] [] [N]	[]	[N]			
RECOMMENDATIONS:	(If di	ifferent	from NAS	A)				
[/] [] [1 .	[] (A	[] DD/DELETE)			
* CIL RETENTION REMARKS:	RATIONALI	E: (If ap	plicable) ADEQUATE INADEQUATE	[]			
SECOND FAILURE W REF: RI/NASA CI 87.	VILL ALLOV IL OF 12-2	W OVERBOA 23-87 AND	RD LEAKA RI/NASA	GE OF LO2. CIL WORKSH	EET OF 11-13-			

ASSESSMI ASSESSMI NASA FMI	ENT :	ID:	MPS-	1174				·	BASEL	INE		j	
SUBSYSTIMDAC ID			MPS 1174 LO2	BLEED	SHUTO	OFF	VALV		719)				
LEAD AN	ALYS	r:	K.A.	HOLD	EN		7.7 - 17.14						
ASSESSMI	ENT:												
		rical Fligh		R	EDUND#	ANC	SCR	EENS			CIL	vr	
	_	OW/FU	-	A		I	3	c			TIE	.1	
NASA IOA		1 /1 1 /1]	[N	A] A]	[]	NA] NA]	N]	IA] IA]	7-	[X] .*	
COMPARE	[/	1	ί] -	[]	[]		[]	
RECOMME	NDAT	ions:	(I	f dif	ferent	fı	om N	ASA)					
-	[/]	[]	ξ]	[1	(AD	[D/D] ELETE)
* CIL RI		rion	RATIO	NALE:	(If a	app]	licab	A	DEQUA DEQUA		[]	
REMARKS: REF: R: 87.		SA CI	L OF	12-23	-87 AN	ID F	RI/NA	SA CI	L WOR	KSHE	ET (F 11	-13-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1175	NASA DATA BASELINE NEW								
SUBSYSTEM: MDAC ID: ITEM:	MPS 1175 LO2 BLEED SHUTO	FF VALVE (PV19)								
LEAD ANALYST:	K.A. HOLDEN		-							
ASSESSMENT:										
CRITICAL: FLIGH		NCY SCREENS	CIL ITEM							
HDW/FU		а в с								
NASA [1 /1 IOA [1 /1] [NA]] [NA]	[NA] [NA] [NA]	[X] * [X]							
COMPARE [/] []	[] []	[]							
RECOMMENDATIONS:	(If different	from NASA)								
(/] []	[] [] (A	[] ADD/DELETE)							
* CIL RETENTION	RATIONALE: (If a	applicable) ADEQUATE INADEQUATE								
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87 A	ND RI/NASA CIL WORKSH								

	1/25/88 MPS-1170 NA		NASA DATA: BASELINE [] NEW [X]							
MDAC ID:	MPS 1176 LO2 BLE	ED SHUTO	E (PV19)							
LEAD ANALYST:	K.A. HO	LDEN								
ASSESSMENT:										
FLIGH					CIL ITEM					
HDW/FU	INC	A	В	С						
NASA [/ IOA [1 /1] [NA]	[] [NA]	[] [NA]	[
COMPARE [N /N] [N]	[N]	[N]	[N]					
RECOMMENDATIONS:	(If d	ifferent	from NA	ASA)						
.]] []	[]	[] (2	[] ADD/DELETE)					
* CIL RETENTION	RATIONALI	E: (If a	npplicab]	.e) ADEQUATE INADEQUATE						
REMARKS: THIS IOA WORKSHE	ET SHOUL	BE COM	BINED WI	TH NUMBER 1	L72.					

ASSESSMEN ASSESSMEN NASA FME	NT	ID:	:	MP	PS-1181 BASELINE []											
SUBSYSTEMDAC ID: ITEM: 21)				MP: 11 LO	81 2 POGO ACCUMULATOR RECIRCULATION VALVE										£ ((PV20,
LEAD ANA	LYS	ST:		к.	A. H	ЮІ	LDEN									
ASSESSME	NT:	3														
•		FL.	CAL: IGH'	ľ				NDAN(CREEN			CI IT			
		•							В		С					
NASA IOA	[3 ,	/3 /3]]	NA]	[NA] NA]	ָ]	NA] NA]		[X]	*
COMPARE	[,	/	3		[]	[]	[]		[]	
RECOMMEN	DA'	rio	NS:		(If	đ:	iffer	ent	from	NASA)					
	[,	/]		[]	[]	[]	(A			ELI	ETE)
* CIL RE		NTI(ON :	RAT	ION	ALJ	E: (I	f ap	plic		ADEC	QUATE QUATE]	
REMARKS: THE RI/N (PRELAUN IS NOT A OF 12-23	AS CH V). ALI	TH D R	E S EDU	ECOI NDAI	NC.	FAIL Y FOR	URE THE	CITE POG	D (LE O VAL	AK II UES.	N ENGI REF:	NE	O)	R I	LINE)

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1182		NASA DATA: BASELINE [] NEW [X]								
 	MPS 1182 LO2 POGO A	CCUMULATOR	RECIRCULATION	VALVE (PV20							
LEAD ANALYST:	K.A. HOLDE	N									
ASSESSMENT:											
CRITICALI FLIGHT HDW/FUN	ŗ	DUNDANCY SC B	REENS C	CIL ITEM							
ŕ		-									
NASA [3 /3 IOA [3 /3] [NA]] [NA]] [NA]	[NA] [NA]	[] *							
COMPARE [/] []] []	[]	[]							
RECOMMENDATIONS:	(If diffe	erent from 1	NASA)								
. [/] []] []		[] .DD/DELETE)							
* CIL RETENTION F	PATTONALE:	(If applica	hle)	•							
REMARKS:		(II appilea	ADEQUATE INADEQUATE	[]							
REF: RI/NASA FME	A/CIL REVIE	EW MEETING 1	NOTES.	<u>-</u> 1000.							

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1183	IPS-1183 BASELINE []										
SUBSYSTEM: MDAC ID: ITEM: 21)	MPS 1183 LO2 POGO	.83 2 POGO ACCUMULATOR RECIRCULATION VALVE (PV:										
LEAD ANALYST:	K.A. HOI	LDEN										
ASSESSMENT:												
CRITICAL FLIGH		REDUNDANC	Y SCREE	ns	CIL ITEM							
	ИС	A B C										
NASA [1 /1 IOA [1 /1] [NA] [NA] [NA] NA]	[NA] [NA]	[X] *							
COMPARE [/] [] [1	[]	[]							
RECOMMENDATIONS:	(If d	ifferent f	rom NAS	A)								
. [/] [] []	[] (Al	[] DD/DELETE)							
* CIL RETENTION	RATIONAL	E: (If app) ADEQUATE INADEQUATE								
REMARKS: REF: RI/NASA CI 87.	L OF 12-	23-87 AND	RI/NASA	CIL WORKSH	EET OF 10-17-							

ASSESSME ASSESSME NASA FME	TI	I	D:	MPS	PS-1184								NASA DATA: BASELINE [] NEW [X]							
SUBSYSTE MDAC ID: ITEM: 21)				MP: 118 LO:		נ כ	ACCU	MUL	AT(OR	RECII	RCT	JLATI	ON V	/ALVI	E (PV	20,			
LEAD ANA	LYS	ST	:	K.2	A. HO	LDI	EN													
ASSESSME	NT	:																		
	CR		ICAL LIGH			R	EDUN	IDAN	CY	SC	REENS	3			CIL	ĸ				
	I		W/FU			A			В			С			1111	4				
NASA IOA	[3	/1R /1R]]	F P]]	F P]	[[P P]		[X] *				
COMPARE	[N	/]	[N]	[N]	[]		[]				
RECOMMEN	DA!	ric	ons:	ı	(If d	if	fere	nt i	fro	om :	NASA)	i .		٠.			•			
	ĺ		/]	[]	[]	[]	(AD	[DD/DE] ELETE)			
* CIL RE	TEI	NT.	ION 1	RAT:	IONALI	Ε:	(If	app	01:	Lca		ΑI	EQUA	TE	[]				
REMARKS: REF: RI 87.		ASZ	A CI	L OI	F 12-	23-	-87	AND	R	[/N.			DEQUA L WOF		•])F 10	-17-			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1185	PS-1185 BASELINE [] 453-1 NEW [X]									
MDAC ID:	MPS 1185 LO2 POGO) ACCUMUL	ATOR REC	IRCULATION '	VALVE (PV20,						
LEAD ANALYST:	K.A. HOL	LDEN									
ASSESSMENT:											
FLIGH	-	REDUNDAN A	CY SCREE	ns C	CIL ITEM						
NASA [2 /1R IOA [2 /1R		P] [P] [F] P]	[P] [P]	[X] *						
COMPARE [/] [] [N]	[]	[]						
RECOMMENDATIONS:	(If di	ifferent	from NAS	A)							
. [/] [] []	[] (A	[] DD/DELETE)						
* CIL RETENTION REMARKS: LOSS OF REDUNDAN CIL OF 12-23-87	IT ITEMS 1	IS NOT RE	ADILY DE	ADEQUATE INADEQUATE	[] REF: RI/NAS#						

	SESSMENT DATE: 1/26/88 SESSMENT ID: MPS-1191 SA FMEA #: 0427-4							NASA DATA: BASELINE [] NEW [X]								
SUBSYSTE MDAC ID:	:		1191		LEVE	L LIC	QUID		or Or	(MT1, 2)					
LEAD ANA	ALYS'	T:	K.A.	HOL	DEN											
ASSESSMI	ENT:															
					REDU	NDANC	ey s	CREENS	3							
	H	DW/FU	IT INC		A		В		С		1	ren	1			
NASA IOA]	2 /1F 3 /1F	R]	[[P]] [F]	[P P]	[X]	*		
COMPARE	[]	N /]	[]	. [и]	[]	[N	J			
RECOMMEN	IDAT:	ions:	(1	f di	ffer	ent f	rom	NASA))							
	[/	1	C]	[]	[] (A] DD,			ETE)		
* CIL RE	ETEN'	TION	RATIO	NALE	: (I	f app	olic	able) IN	AD AD	EQUATE EQUATE]]			
REMARKS: THIS ASS INDICATI SHUTDOWN 23-87.	SESSI [NG \	WET W	7ILL A	LLOW	ENG	INE I	OR	CO SEN	ISO ESU	RS. TWO	O 5	SEN DE I	ISC PLE	TION		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-119	IPS-1192 BASELINE [
	MPS 1192 LO2 LOW	LEVEL LI	QUID SENS	OR (MT1, 2))						
LEAD ANALYST:	K.A. HO	LDEN									
ASSESSMENT:											
		REDUNDAN	CY SCREEN	S	CIL ITEM						
	FLIGHT HDW/FUNC A B C										
NASA [3 /1R IOA [2 /1R] [P] [P] [F] [P] [F] P]	[X] * [X]						
COMPARE [N /] [] [N] [иј	[]						
RECOMMENDATIONS:	(If d	ifferent	from NASA)							
[2 /1R] [P] [F] [P] (A	[DD/DELETE)						
* CIL RETENTION	RATIONAL	E: (If ap	•	ADEQUATE NADEQUATE	[]						
REMARKS: THIS ASSESSMENT INDICATING DRY W REF: RI/NASA CI	ILL CAUS	E AN ENGI	H2 ECO SE NE SHUTDO	NSORS. TW WN COMMAND	O SENSORS TO BE GIVEN						

ASSESSME ASSESSME NASA FME	NT I	D:	1/26/8 MPS-1: 0410-:	201		NASA DATA: BASELINE [] NEW [X]										
SUBSYSTEMDAC ID:	M:		MPS 1201 LO2 S	rsy	EM DE	LTA 1	P TRA	NSDUC	CER (M	Γ44,	. 50)				
LEAD ANA	LYST	':	K.A. 1	IOF	DEN											
ASSESSME	NT:															
1		ICAL	ITY T		REDUN	DANC	Y SCR	EENS			CIL					
	HD	W/FU	NC		A]	В	C	:							
NASA IOA	[3 [3	/3 /3]	[NA] NA]	[] []	NA] NA]	/] //]	IA] IA]		[]	*			
COMPARE	[/]	[]	[]	[]		[]				
RECOMMEN	DATI	ons:	(If	di	ffere	nt f	rom N	ASA)								
-	[/	1	E	· J	[]	[]	(AI	[D/D		TE)			
* CIL RE	TENT	'ION	RATION	ALE	: (If	app:	licab	P	DEQUA']				
REMARKS:	ONT.V	ים י		T / N	IASA FI	MEA /	CTT. R		MEET'			ES.				

	1/26/88 MPS-1202 0410-4		BASELINE NEW								
	MPS 1202 LO2 SYSTEM	DELTA P TRANS	DUCER (MT44,	, 50)							
LEAD ANALYST:	K.A. HOLDEN	ī									
ASSESSMENT:											
FLIGH	T	OUNDANCY SCREE		CIL ITEM							
•											
NASA [1 /1 IOA [1 /1] [NA]] [NA]	[NA] [NA]	[NA] [NA]	[X] * [X]							
COMPARE [/] []	[]	[]	[]							
RECOMMENDATIONS:	(If diffe	erent from NAS	A)								
] []	[]	[] (A)	[] DD/DELETE)							
* CIL RETENTION	RATIONALE: () ADEQUATE INADEQUATE	[]							
REMARKS: FOR MTS ONLY. R REVIEW MEETING N	EF: RI/NASA										

ASSESSMI ASSESSMI NASA FMI	ENT	I	ATE: D:	1/26/8 MPS-12 NA	IPS-1211 BASELIN													
SUBSYSTIMDAC ID: ITEM: (TP9)					REI	PRE	ess di	SC	201	INEC	т сн	ΉE	CK V	ALVE	TES	ST	POR	r
LEAD AND	ALYS	ST	:	K.A. I	IOI	LDE	EN											
ASSESSMI	ENT	:																
		F	LIGHT					NC	Y	SCR	EENS	5			CII			
	I	HDI	/FUI	1C		A			В			С						
NASA IOA	[2	/ /1R]	[P]	[P]	[[P]] [X		* 	
COMPARE	[N	/N]	[N]	[N]	[N]	-	[]	1]		
RECOMMEN	'ADA	ric	ONS:	(If	di	.ff	erent	: f	ro	om N.	ASA)							
-	[/]	[]	[]	[]		[D/E		LETE)
* CIL RI	ETEN	NT	ION I	RATIONA	LE	:	(If a	pp	11	.cab	•	AI VAI	EQU <i>I</i>	ATE ATE	[]	. 11.	
REMARKS: THIS FAI PRESSURI RI/NASA	LUI ZAI	ri(MODE SU NC		DF	ES	SED I	N	TH	IE A	NALY	sı	S 01	THE	GC	2		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1221	MPS-1221 BASELINE NA NEW						
MDAC ID:	MPS 1221 LO2 17 INCH O							
LEAD ANALYST:	K.A. HOLDEN							
ASSESSMENT:								
FLIGH			CIL ITEM					
HDW/ FU	NC A	ВС						
NASA [/ IOA [1 /1] []] [NA]	[] [] [NA] [AN]	[] * [X]					
COMPARE [N /N] [N]	[N] [N]	[N]					
RECOMMENDATIONS:	(If differe	nt from NASA)						
[/] []		[] ADD/DELETE)					
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []								
REMARKS: THIS FAILURE MODE IS ADDRESSED IN THE ANALYSIS OF THE LO2 FEEDLINE DISCONNECT (PD1) ON IOA WORKSHEET 1042 AND RI/NASA 0408- 4.								

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/26/88 MPS-1231 NA		NASA DATA BASELINE NEW				
MDAC ID:	MPS 1231 LO2 FEEDLINE I	RELIEF TEST	PORT (TP24)	·			
LEAD ANALYST:	K.A. HOLDEN						
ASSESSMENT:							
CRITICAL FLIGH	Ins	CIL ITEM					
HDW/FU		В	C	* * * * * * * * * * * * * * * * * * *			
NASA [/ IOA [2 /1R] []]]	[] [F]	[] [P]	[] * [X]			
COMPARE [N /N] [N]	[N]	[и]	[N]			
RECOMMENDATIONS:	(If differe	nt from NAS	SA)				
[/] []	[]	[] (A)	[] DD/DELETE)			
* CIL RETENTION	RATIONALE: (If	applicable	ADEQUATE				
REMARKS: THIS FAILURE MODE IS ADDRESSED IN THE ANALYSIS OF THE LO2 RELIEF LINE (PV7 TO RV5) ON IOA WORKSHEET 252 AND RI/NASA 0424-1.							

ASSESSME ASSESSME NASA FME	NT ID:		PS-124	-1241 BASELINE NEW						NE	•	x]	
SUBSYSTE MDAC ID:			PS 241 02 FEEI	DLI	NE MAI	NIF	OLD (1	1A1	L)					
LEAD ANA	LYST:	K	.A. HO	LDE	EN									
ASSESSME	ENT:													
	FL	IGHT	Y	RE	EDUNDAI	1CY	SCRE	ENS			C]	L CEM	1	
	HDW,	/FUNC	!	A		В			C					
NASA IOA	[1 /	/] /1]]	NA]	[[N] A]	[NA]		[x]	*
COMPARE	[N ,	/и]	[N]	[N]	[N]		[N]	
RECOMMEN	NDATIO	NS:	(If d	iff	ferent	fr	om NA	SA))					
-	[3 ,	/3]	[NA	A]	[N	A]	[NA]	(AD		/DE		ETE;
* CIL RI		ON RA	TIONAL	E:	(If a	ppl	icabl		ADEQUAT	re re	[]	
REMARKS: BLOCKAGI		PREV	ENT TA	NK	FILL (OR	ENGIN	E S	START.					

SUBSYSTEM: MPS MDAC ID: 1242 ITEM: LO2 FEEDLINE LEAD ANALYST: K.A. HOLDEN	E MANIFOLD (MA1	**************************************	entre est
TEAN ANATUCE. Y A MOTHEN		,	
HEAD WANTIST: K.W. HOPPEN			
ASSESSMENT:			en e
CRITICALITY REDU FLIGHT HDW/FUNC A			CIL ITEM
·	_		
NASA [1 /1] [NA] IOA [1 /1] [NA]	[NA] [NA]	[X] * [X]
COMPARE [/] []	[] []	[]
RECOMMENDATIONS: (If differ	rent from NASA)		
[/] []	[] [] (AD	[] DD/DELETE)
* CIL RETENTION RATIONALE: (1) REMARKS: REF: RI/NASA CIL OF 12-23-87	IN	ADEQUATE ADEQUATE	

ASSESSMI ASSESSMI NASA FMI	ENT	II):	MPS	26/88 NASA DATA: PS-1243 BASELINE [] 19-2 NEW [X]									
SUBSYSTEMDAC ID:				MPS 124 LO2	13	LINE	MAN:	IFOL	D (MA:	1)				
LEAD ANA	ALYS	ST:	:	K. 2	A. HOI	LDEN								
ASSESSMI	ENT	:												
CRITICALITY REDUNDANCY SCREENS FLIGHT HDW/FUNC A B C								CIL ITEM						
	1	HDV	v/FU	NC		A		В		С				
NASA IOA]	1	/1 /1]	[NA] NA]	[[NA] NA]	[NA] NA]		(X)]	*
COMPARE	[/]	ſ]	[]	[]		[]	
RECOMME	NDA'	ΓΙC	ons:		(If d:	iffer	ent	from	NASA)				
	[/]	[]	[]	(1	(A)	[DD/D		ETE)
* CIL R	ete)	NT:	ION	RAT:	IONALI	E: (I	f ap	plic		ADEQU NADEQU		[]	
REMARKS THIS IO		ORI	KSHE	ET :	SHOUL	D BE	COMB	INED	WITH	1242.				

ASSESSME ASSESSME NASA FME	NT	ID:		-1244			NĀSĀ DĀTA: BASELINE [] NEW [X]						
SUBSYSTE MDAC ID: ITEM:	M:		MPS 124 LO2		LINE	MANIE	OLD	(MA1)				
LEAD ANA	LYS	T:	K.A	. HOLI	DEN								
ASSESSME	NT:												
		FLIGH	T	F							CII		
	Н	DW/FU	NC	P	7	E	3	(C				
NASA IOA	[3 /3 3 /3]	[] []	IA] IA]	[N	IA] IA]	[]	NA] NA]		[] *	
COMPARE	[/]	[]	[]	[]		[]	
RECOMMEN	DAT	ions:	(If dif	fere	nt fr	om N	ASA)					
	[/]	[]	[]	[]	(A	[DD/E] DELETE)	
* CIL RE	TEN'	TION :	RATI	ONALE:	(If	appl	icab.	· i	ADEQU ADEQU		[]	
	/NA	SA FM	EA/C	IL REV	/IEW	MEETI	NG N	OTES	•				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/26/88 MPS-125 NA	1		NASA DATA BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM:	MPS 1251 LO2 FILE	L & DRAI	IN LINE (I	FH1)	
LEAD ANALYST:	к.а. но	LDEN		•	
ASSESSMENT:	•				
CRITICAL FLIGH		REDUNDA	ANCY SCREE	ens	CIL ITEM
HDW/FU		A	В	С	
NASA [/ IOA [3 /3] [NA]	[] [NA]	[] [NA]	[] *
COMPARE [N /N] [и]	[N]	[N]	[]
RECOMMENDATIONS:	(If d	ifferent	t from NAS	SA)	
[3 /3] [NA]	[NA]	[NA]	[] .DD/DELETE
* CIL RETENTION REMARKS:	RATIONAL	E: (If a	applicable	e) ADEQUATE INADEQUATE	[]

ASSESSMENT ASSESSMENT NASA FMEA #	ID: MPS-	1252	A: E [] V [X]				
MDAC TD:	MPS 1252 LO2	: FILL & DR	AIN LINE	(FH1)			
LEAD ANALYS	r: K.A.	HOLDEN					
ASSESSMENT:							
	TICALITY FLIGHT	REDUN	DANCY SCR	EENS	CIL		
	DW/FUNC	A	В	C	IIEM		
NASA []	1 /1] 1 /1]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[X] * [X]		
COMPARE [/]	[]	[]	[]	[]		
RECOMMENDAT	IONS: (1	f differe	nt from N	ASA)			
Į.	/ 1	[]	[]	[]	[] ADD/DELETE)		
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []							
REMARKS: THIS ANALYSIS IS FOR THE UNINSULATED LINE (OV102). REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 12-14-87.							

ASSESSME ASSESSME NASA FME	NT ID:	MPS-	1253				r	BASELINE NEV]	
SUBSYSTE MDAC ID: ITEM:		MPS 1253 LO2		& DR	AIN L	INE	(FH1)				
LEAD ANA	LYST:	K.A.	HOLD	EN							
ASSESSME	NT:										
	CRITICA		R	EDUN	DANCY	SCR	EENS		CIL		
	FLIC HDW/I	TUNC	A	-	В		(111	ir.r	
NASA IOA		<u> </u>	[N	IA] IA]	[N	IA] IA]	[] []	IA] IA]	x] x]	[]	*
COMPARE	[/	3	[]	[]	[]	[]	
RECOMMEN	IDATIONS	5: (1	f dif	fere	nt fr	om N	ASA)				
	[/]	Ţ]	[]	ſ] (2	[ADD/D	ELE	TE
* CIL RE		N RATIO	NALE:	(If	appl	icab	7	ADEQUATE ADEQUATE]	
REMARKS: THIS IOA		HEET SI	HOULD	BE C	OMBIN	IED W	ITH :	1252.			

ASSESSMEN ASSESSMEN NASA FMEA	NT ID:	MPS-1253	BA				NASA DATA BASELINE NEW	-	
SUBSYSTEM MDAC ID: ITEM:		MPS 1253 LO2 FILI	L & DRAI	N :	LINE (FH]	L)		urus er
LEAD ANA	LYST:	K.A. HOI	LDEN		: L .				***
ASSESSMEN	NT:								
(CRITICAL:	ITY	REDUNDA	NC	Y SCRE	ENS	5	CIL	
	HDW/FUI		A		В		c	TIE	AM.
NASA IOA	[1 /1 [1 /1] [NA] NA]		NA] NA]	[X	*
COMPARE	[/] []	[]	Į]	[]
RECOMMENI	DATIONS:	(If di	fferent	f	rom NAS	SA)			
-	[/] []	[]	[] (A	[D/D] ELETE)
* CIL RET	TENTION I	RATIONALE	E: (If a	pp:	licable	•	ADEQUATE IADEQUATE	[]
REMARKS: THIS ANAI						LIN	E. REF:	-	NASA CIL

ASSESSME ASSESSME NASA FME	NT ID:	MPS-12	54	NASA DATA: BASELINE [] NEW [X]						
SUBSYSTE MDAC ID:		MPS 1254 LO2 FI	LL & DR	AIN LINE	(FH1)					
LEAD ANA	LYST:	к.а. н	OLDEN							
ASSESSME	INT:									
	CRITICAL FLIGH		REDUN	DANCY SCR	EENS	CIL ITEM				
		JNC	A	В	С	2 * 24*				
NASA IOA	[3 /3 [3 /3]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[]	*			
COMPARE	[/]	[]	[]	[]	[]				
RECOMMEN	DATIONS	(If	differe	nt from N	AŚĀ)					
	[/]	[]	[]	[]	[]	ETE)			
		RATIONA	LE: (If	applicab	le) ADEQUATE INADEQUATE	[]				
				INSULATED	LINE. REF:		SA			

	DATE: 1/26/8 ID: MPS-12 #: NA			NASA DATA BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM:		' INCH FE	EDLINE (FH2)	- Padronie Burgelou
LEAD ANALY	ST: K.A. H	IOLDEN			
ASSESSMENT	:				
	ITICALITY FLIGHT HDW/FUNC	REDUND.	ANCY SCR B	EENS C	CIL ITEM
	1/1]	[] [AN]	[] [NA]	[] [NA]	[] * [x]
COMPARE [N /N]	[N]	[N]	[N]	[N]
RECOMMENDA	TIONS: (If	differen	t from N	ASA)	
· [3 /3]	[NA]	[NA]		[] DD/DELETE)
* CIL RETE	NTION RATIONA	LE: (If	applicab	le) ADEQUATE INADEQUATE	
	ILL PREVENT T	ANK FILL	OR ENGI	NE START.	

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1262	PS-1262 BASELINE [
	MPS 1262 LO2 17 I	NCH_FEEDI	LINE (FH2)					
LEAD ANALYST:	K.A. HOL	DEN						
ASSESSMENT:								
CRITICAI FLIGH	JTY	REDUNDANG	CY SCREENS	5	CIL			
	-	A	В	С	ITEM			
NASA [1 /1 IOA [1 /1] [NA] [AN [NA] [NA] [NA] NA]	[X] * [X]			
COMPARE [/] [] [] [1	[]			
RECOMMENDATIONS:	(If di	fferent i	from NASA)					
, t , /] .[] [] [] (AI	[] DD/DELETE)			
* CIL RETENTION	RATIONALE	: (If app	•	10000				
			IN	ADEQUATE IADEQUATE				
REMARKS: THIS ANALYSIS IS OF 12-23-87 AND					RI/NASA CII			

ASSESSMI ASSESSMI NASA FMI	ENT I	D:		1262A				ASA D BASEL]	
SUBSYSTI MDAC ID: ITEM:			MPS 1262 LO2	17 IN	CH FEED	LINE (125				
LEAD AN	ALYST	:	K.A.	HOLD	EN							
ASSESSMI	ENT:											
	F	ICAL LIGH W/FU	\mathbf{T}	R A	EDUNDAN	CY SCR	EENS C			CIL		
NASA IOA	[1	/1 /1]	[N.	A] [A] [NA] NA]	[N	A] A]		[X]	*
COMPARE	C	/]	[] []	[1		(]	
RECOMME	NDATI	ons:	(1	f dif	ferent	from N	ASA)					
-	[/]	[] []	[]	(AE	[D/D		ETE)
* CIL R	ETENT	'ION	RATIO	NALE:	(If ap	plicab	A	DEQUA		[]	
REMARKS REF: R 87.	: I/NAS	A CI	L OF	12-23	-87 AND	RI/NA	SA CI	L WOR	KSHE	ET	OF	12-14-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1263	NASA DATA: BASELINE [] NEW [X]
MDAC ID:	MPS 1263 LO2 17 INCH FEEDLINE (FH2)
LEAD ANALYST:	K.A. HOLDEN	
ASSESSMENT:		
CRITICAL FLIGH	ITY REDUNDANCY SCR	EENS CIL ITEM
HDW/FU	INC A B	С
NASA [1 /1 IOA [1 /1] [NA] [NA]] [NA] [NA]	[NA] [X] * [NA] [X]
COMPARE [/] [] []	[] []
RECOMMENDATIONS:	(If different from N	ASA)
[/] [] []	[] [] (ADD/DELETE)
* CIL RETENTION	RATIONALE: (If applicab	le) ADEQUATE [] INADEQUATE []
REMARKS: THIS ANALYSIS IS SHOULD BE COMBIN		LINE. THIS IOA WORKSHEE

ASSESSME ASSESSME NASA FME	NT I			264	ļ.				NASA DAT BASELII NI		x]
SUBSYSTE MDAC ID: ITEM:	M:		MPS 1264 LO2 17	7]	NCH FE	EED:	LINE (e ge		1 7 77 1
LEAD ANA	LYST	:	K.A. F	ЮІ	LDEN						
ASSESSME	NT:										
		ICAL LIGH	ITY T		REDUNI	AN	CY SCR	EENS	5	CI	L EM
	HD	W/FU	NC		A		В		С		
NASA IOA	[3 [3	/3 /3]	[NA]]	NA] NA]	[NA] NA]]] *]
COMPARE	[/]	[1	[1	[]
RECOMMEN	DATI	ons:	(If	đi	fferer	nt :	from N	ASA)	ı		
	[/]	[]	[]	[]] DELETE)
* CIL RE	TENT	ION :	RATIONA	LE	: (If	ap	plicab	le)	a DEOUAE	. r	,
								I	ADEQUATI IADEQUATI]
REMARKS: THIS ANA						NS	ULATED	LIN	NE. REF	RI	/NASA

ASSESSMENT ASSESSMENT NASA FMEA	r ID	:	MPS-12	64	IA				BASE	LINE NEW	[]	
SUBSYSTEM MDAC ID:	:		MPS 1264 LO2 17	']	INCH FE	EDI	LINE (F	H2))				
LEAD ANALY	YST:		K.A. H	[0]	LDEN								
ASSESSMEN'	T:												
C					REDUND	AN	CY SCRE	EN:	S		CII		
		IGHT /FUN	1C		A		В		С			111	
NASA IOA	[3 [3	/3 /3]	[NA] NA]	[NA] NA]	[NA] NA]		[]	*
COMPARE	[/]	[]	[]	[3		[]	
RECOMMEND	ATIO	NS:	(If	d:	ifferen	t :	from NA	SA)				
	[/]	[]	(]	[]	(Al	[DD/E		TE)
* CIL RET	ENTI	ON I	RATIONA	ΧLJ	E: (If	ap)	plicabl		ADEQU VADEQU		_]	
REMARKS: THIS ANAL FMEA/CIL						J.	ACKETED	L	INE.	REF:	RI	/NA	SA

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1271		NASA DATA: BASELINE NEW	
MDAC ID:	MPS 1271 LO2 12 INCH FE	EEDLINE (FH3,	4, 5)	-
LEAD ANALYST:	K.A. HOLDEN			
ASSESSMENT:				
CRITICAL FLIGH HDW/FU	T	DANCY SCREENS		CIL ITEM
NASA [/ IOA [1 /1] []] [NA]	[] [[AN]	NA]	[] * [X]
COMPARE [N /N] [N]	[и] [и]	[N]
RECOMMENDATIONS:	(If differer	nt from NASA)		
[3 /3] [NA]	[NA] [NA]	[] D/DELETE)
* CIL RETENTION	RATIONALE: (If		ADEQUATE ADEQUATE	[]
REMARKS: BLOCKAGE WILL PR START.	EVENT PRESTART	CONDITIONING	AND PREVE	NT ENGINE

SUBSYSTEM: MPS MDAC ID: 1272 ITEM: LO2 12 INCH FEEDLINE (FH3, 4, 5) LEAD ANALYST: K.A. HOLDEN ASSESSMENT: CRITICALITY REDUNDANCY SCREENS CIL FLIGHT HDW/FUNC A B C NASA [1 /1] [NA] [NA] [NA] [NA] [X] * IOA [1 /1] [NA] [NA] [NA] [X] COMPARE [/] [] [] [] [] RECOMMENDATIONS: (If different from NASA) [/] [] [] [] [] [] * CIL RETENTION RATIONALE: (If applicable) REMARKS: THIS ANALYSIS IS FOR THE VACUUM JACKETED LINE (OV102). REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 12-14-87	ASSESSME ASSESSME NASA FME	NT	II):	MPS	S-1272 BASELINE							[]	
ASSESSMENT: CRITICALITY REDUNDANCY SCREENS CIL ITEM HDW/FUNC A B C NASA [1 /1] [NA] [NA] [NA] [X] * IOA [1 /1] [NA] [NA] [X] * IOA [1 /1] [NA] [NA] [NA] [X] * IOA [1 /1] [NA] [NA] [NA] [NA] [X] * IOA [1 /1] [NA] [NA] [NA] [NA] [X] * IOA [1 /1] [NA] [NA	MDAC ID:				127	72	INCH	FEEDI	LINE	(FH3,	4,	5)				
CRITICALITY REDUNDANCY SCREENS CIL ITEM HDW/FUNC A B C NASA [1 /1] [NA] [NA] [NA] [X] * IOA [1 /1] [NA] [NA] [NA] [X] * COMPARE [/] [] [] [] [] [] [] [] [] [LEAD ANA	LYS	ST:	:	K.	. но і	LDEN									
FLIGHT HDW/FUNC A B C NASA [1/1] [NA] [NA] [NA] [X]* IOA [1/1] [NA] [NA] [NA] [X]* COMPARE [/] [] [] [] [] RECOMMENDATIONS: (If different from NASA) [/] [] [] [] [] [] * CIL RETENTION RATIONALE: (If applicable) * CIL RETENTION RATIONALE: (If applicable) REMARKS: THIS ANALYSIS IS FOR THE VACUUM JACKETED LINE (OV102). REF:	ASSESSME	NT	:													
NASA [1 /1] [NA] [NA] [NA] [X] * IOA [1 /1] [NA] [NA] [NA] [X] COMPARE [/] [] [] [] [] RECOMMENDATIONS: (If different from NASA) [/] [] [] [] [] (ADD/DELETE * CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] REMARKS: THIS ANALYSIS IS FOR THE VACUUM JACKETED LINE (OV102). REF:		CR					REDU	NDANG	CY SC	REENS	5				4	
COMPARE [/] [] [] [] [] RECOMMENDATIONS: (If different from NASA) [/] [] [] [] [] [] [] [] [] [1					A		В		С				-	
RECOMMENDATIONS: (If different from NASA) [/] [] [] [] [] (ADD/DELETE * CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE [] REMARKS: THIS ANALYSIS IS FOR THE VACUUM JACKETED LINE (OV102). REF:	NASA IOA]	1	/1 /1]	[NA] NA]]	NA]	[[NA] NA]		[X X]	*
[/] [] [] [] [] [] * CIL RETENTION RATIONALE: (If applicable) * ADEQUATE [] INADEQUATE [] REMARKS: THIS ANALYSIS IS FOR THE VACUUM JACKETED LINE (OV102). REF:	COMPARE	[/]	[3	τ]	ľ]		[)	
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE [] REMARKS: THIS ANALYSIS IS FOR THE VACUUM JACKETED LINE (OV102). REF:	RECOMMEN	IDA!	ri(ons:	:	(If d	iffer	ent :	from	nasa))					
ADEQUATE [] INADEQUATE [] REMARKS: THIS ANALYSIS IS FOR THE VACUUM JACKETED LINE (OV102). REF:		[/]	[]	[]	[]					
REMARKS: THIS ANALYSIS IS FOR THE VACUUM JACKETED LINE (OV102). REF:	* CIL RE	TE	NT:	ION	RAT	IONAL	E: (I	f ap	plica	ble)	ADEÇ	QUATE	[]	
	THIS ANA	LY	SI: L (S IS	5 FO	R THE 3-87	VACU AND R	UM J	ACKET SA CI	ED L	INE ((0V102).]	RE)	F: -87.

ASSESSME ASSESSME NASA FME	NT I			BASELINE []									
SUBSYSTE MDAC ID: ITEM:			MPS 1272 LO2 1	2 II	NCH FE	EEDI	LINE (I	FH3	, 4, 5)				
LEAD ANA	LYST	:	K.A.	HOLI	DEN				*,				
ASSESSME	NT:												
		ICAL		F	REDUNE)AN	CY SCRE	EENS	3		CIL	4	
			NC	2	A		В		С	-		•	
NASA IOA	[1	/1 /1]	[]	IA] IA]	[NA] NA]	[[NA] NA]	[X]	*
COMPARE	[/]	[1	[J	[]	[]	
RECOMMEN	DATI	ons:	(If	dii	feren	it 1	rom NA	ASA))				
	[/]	[]	[]	[D/DI		TE)
* CIL RE		ION I	RATION	ALE:	(If	app	olicabl	•	ADEQUATE VADEQUATE		•]	
REMARKS: THIS ANA OF 12-23	LYSI								NE. REF: 2-14-87.	F	RI/N	IAS	A CIL

ASSESSME ASSESSME NASA FME	NT II		•	- 1273		NASA DATA: BASELINE [] NEW [X]								
SUBSYSTE MDAC ID:			MPS 127: LO2		ich f	'EEDI	INE (FH3	, 4, 5)				
LEAD ANA	LYST	:	K.A	. HOLI	DEN									
ASSESSME	NT:													
	CRIT	ICAL LIGH		I	REDUN	IDANC	Y SCR	EENS	5			IL FEM	ſ	
	HD	W/FU	NC	7	A.		В		C					
NASA IOA	[1 [1	/1 /1]]	1] 1]	NA] NA]]	NA] NA]	[NA] NA]]	X X]	*
COMPARE	[/]	[1	[]	[]		[]	
RECOMMEN	DATI	ons:	(:	If di	fere	nt f	rom N	ASA))					
-	[/]	[]	Ţ]	[]	(Al		/ DE		ETE
* CIL RE		ION	RATI(ONALE:	: (If	app	licab	-	ADEQU NADEQU		[]	
REMARKS:		KSHE	ET SI	HOULD	BE C	омвт	NED W	ІТН	1272.					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1281	L		BASELINE NEW	
MDAC ID:	MPS 1281 LO2 FEEI	MANIFO	OLD RELIER	VALVE (RV5)	
LEAD ANALYST:	K.A. HO	LDEN			
ASSESSMENT:					
CRITICAL: FLIGH' HDW/FU	r	REDUNDA	NCY SCREE	ens C	CIL ITEM
•			_	•	
NASA [1 /1 IOA [2 /1R] [NA] P]	[NA] [F]	[NA] [P]	[X] * [X]
COMPARE [N /N] [и ј	[N]	[N]	[]
RECOMMENDATIONS:	(If d	ifferent	from NAS	SA)	
[/] [1	[]	[] (AI	[] DD/DELETE)
* CIL RETENTION	RATIONALI	E: (If a	applicable		r 1
				ADEQUATE INADEQUATE	
REMARKS: LEAKAGE OF LO2 F. FAILURE OF THE I			INE CAN O		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-1281A		BASELINE NEW	_	x]	
	MPS 1281 LO2 FEED MANIF	OLD RELIEF V	ALVE (RV5)			
LEAD ANALYST:	K.A. HOLDEN					
ASSESSMENT:						
CRITICAL FLIGH		ANCY SCREENS	}	CI IT		
HDW/FU	NC A	В	С			
NASA [1 /1 IOA [2 /1R] [NA]] [P]	[NA] [[F] [NA] P]	[x] [*]	k
COMPARE [N /N] [N]	[11] [и ј	[]	
RECOMMENDATIONS:	(If differen	t from NASA)				
[/] []	[] [(AI	[\dc	DELE:	ΓE)
* CIL RETENTION	RATIONALE: (If	applicable)	ADEQUATE	[]	
REMARKS:		II	IADEQUATE	[]	
LEAKAGE OF LO2 F FAILURE OF THE I			R WITHOUT	A	PRIO	R

ASSESSMENT DATE:	1/26/88			NASA DATA	
ASSESSMENT ID:	MPS-128	2		BASELINE	1 1
		_			
NASA FMEA #:	0412-2			NEW	[X]
SUBSYSTEM:	MPS			tt tuus	***
	1282				
				/	_
ITEM:	LO2 FEE	D MANIF	OPD KEPTE	F VALVE (RV5)
LEAD ANALYST:	K.A. HO	LDEN			
Dund mindlet.	11111				
ASSESSMENT:					the end of the second
CDTTTCAT	TTV	DEDUND	ANCY SCREE	PNC	CIL
		REDUND	MICI SCREI	ENO.	•
FLIGH					ITEM
HDW/FU	NC	A	В	C	
•					
MAGA 5 2 /2		373 7	r 373.1	C 373.7	r 7 ±
NASA [3 /3	J	MAJ	[NA]	[NA] [P]	[] * [X]
IOA [3 /2R] [NA] P]	[F]	[P]	[X]
-	-	-			-
COMPARE [/N	з г	N]	[N]	[N]	[N]
COMPARE [/N	J L	14]	[14]	[14]	[14]
					•
RECOMMENDATIONS:	(If d	ifferen	t from NAS	SAI	
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* CIL RETENTION	RATIONAL.	E: (II 9	abbricapie		
				ADEQUATE	
				INADEQUATE	ři
REMARKS:					ı j
THE RI/NASA ANAL	YSIS IS	FOR A F	ALLURE TO	RESEAT FOLL	DWING RELIEF.
IOA'S ANALYSIS R	EFERS TO	FAILUR	E TO REMAI	IN CLOSED DUI	RING ENGINE
				MEETING NO	
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ASSESSME ASSESSME NASA FME	26/88 NASA DATA: S-1282A BASELINE [] 12-3 NEW [X]																	
SUBSYSTEM: MPS MDAC ID: 1282 ITEM: LO2 FE							MANIF	ΟL	D I	RELIE	F '	VA]	LVE	(RV5)			
LEAD ANA	LYS	ST	:	K.A.	IOI	DE	EN											
ASSESSME	NT	:																
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C																		
		A			В			С										
NASA IOA	[2	/1R /2R]	[P P]	[F F]	[[P P]		[X X]	*
COMPARE	[N	/N	3	[]	[]	[]		[]	
RECOMMEN	DA'	ΓI	ons:	(If	đi	.f1	feren	t	fr	om NA	SA)						
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* CIL RE	TE:	NT	ION :	RATION	ALE	:	(If	аp	pl:	icabl	.e)	** 1	DEOU	አጠዊ	r		7	
											I		DEQU.	ATE	[]	
REMARKS: SECOND FAILURE WILL ALLOW LEAKAGE OF LO2. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 10-5-87.											L OF							

ASSESSME ASSESSME NASA FME	1/26/88 MPS-1283 0412-1						NASA DATA: BASELINE [] NEW [X]											
SUBSYSTEM MDAC ID:	M:			MPS 1283 LO2 FE	EI) M	ANII	FO:	ĽD	F	ELIE	F T	VALVE (RV5)				
LEAD ANA	LYS	T:		K.A. E	101	LDE	:N											
ASSESSME	NT:																	
•		FL]	CALI			RE	:DUNI	Al	1C	Y	SCRE	ENS	5		CI II		ſ	
	H	DW/	/FUN	IC.		A				В			C					
NASA IOA	-		/1R /1]]	P NA]		[[F NA]	[P] NA]		[[X X]	*
COMPARE	[N /	/N]	[N]	ļ		N]	[и ј		[]	
RECOMMEN	DAT	IOI	1S:	(If	di	ff	erer	nt	f	rc	m NAS	SA))					
-	£	/	/]	[]	1	[]	[]		[D/			TE)
* CIL RE	TEN'	TIC	N F	RATIONA	LE	E:	(If	ar	go	li	.cable		ADEQUA'	ΓE	[]	
REMARKS: REDUNDAN																RI	/N	ASA

ASSESSMI NASA FMI	ENT :	ID:		1291		BASELINE [] NEW [X]							
SUBSYSTI MDAC ID: ITEM:			MPS 1291 GO2	PRESS	URE	MANIF	OLD	REPRE	ss of	RIFIC	E (RP1)
LEAD AND	ALYS'	T:	K.A.	HOLD	EN								
ASSESSMI	ENT:												
		TICAL FLIGH		R	EDUN	DANCY	SCR	EENS			CIL		
		DW/FU		A		В		C	:				
NASA IOA	[3 /3 3 /3]	[N	A] A]	[N.	A] A]	[N	IA] IA]		[]	*
COMPARE	[/]	[]	[]	[]		[]	
RECOMME	NDAT	ions:	(I	f dif	fere	nt fr	om N	ASA)					
-	[/]	(]	[]	[]	(AI	[D/D/] ELE	TE)
* CIL RI		TION	RATIO	NALE:	(If	appl	icab	P	DEQUA		[]	
	-	SA FM	EA/CI	L REV	IEW	MEETI	NG N	OTES.					

ASSESSMEN ASSESSMEN NASA FMEA	Ö:	MPS-1292 NA					NASA DA BASELI N							SELIN							
SUBSYSTEM MDAC ID: ITEM:	1 :			MPS 129 GO2		5 5 1	JRE	MA	N	F	OLD	REI	?F	RE:	ss	ORIF	'IC	CE	(RF	1)	
LEAD ANAI	LYS	T:		K. A	A. HO	LD	EN														
ASSESSMEN	T:																				
C			CAL LIGH			R	EDU	NDA	N	CY	SCI	REE	15	3				CI IT			
	H	DV	V/FU	NC		A				В				С							
NASA IOA	[3	/3]	[N] A]] [NZ] A]			N] A]			[]	*	ŧ
COMPARE	[N	/N]	ι	N]		[N]	ĺ		N]			[]		
RECOMMENI	TAC	IC	ns:	((If d	if:	fer	ent	. 1	r	om 1	NASA	۲)								
	[/]	ſ		']		[٢]	(!	.]	(ΑI		DEL		E)
* CIL RET	CEN	T]	ON :	RATI	CONALI	3:	(I	fa	pr	1:	ical	•				QUATE QUATE]		
FAILURE N	10D	E	NOT	CRE	EDIBL	₹.													-		

ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:		NASA DATI BASELINI NEV	SA DATA: ASELINE [] NEW [X]										
SUBSYSTEM: MDAC ID: ITEM:	MPS 2001 LH2 INBOARD FIL	L AND DRAIN VALVE (1	PV12)										
LEAD ANALYST:	W.J.MCNICOLL												
ASSESSMENT:	ASSESSMENT:												
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C													
NASA [1 /1 IOA [1 /1] [NA]] [P]	[NA] [NA] [P]	[X] * [X]										
COMPARE [/] [N]	[и] [и]	[]										
RECOMMENDATIONS	: (If different	from NASA)											
] []	[] []	[] ADD/DELETE)										
* CIL RETENTION	* CIL RETENTION RATIONALE: (If applicable) ADEQUATE []												
REMARKS: REF: RI/NASA C 87.	IL OF 12-23-87 AN	INADEQUATE D RI/NASA CIL WORKSI	• •										

ASSESSMENT ASSESSMENT NASA FMEA	'ID:	MPS-2002	PS-2002 BASELINE [] 0301-4 NEW [X]								
SUBSYSTEM: MDAC ID: ITEM:		MPS 2002 LH2 INBO	DARD FII	L AND DRA	AIN VALVE (P	V12)					
LEAD ANALY	ST:	W.J.MCN	COLL								
ASSESSMENT	: :										
CF	RITICALI FLIGHT HDW/FUN	ני ני	REDUNDA A	NCY SCREI		CIL ITEM					
NASA [IOA [1 /1 1 /1		NA] P]	[NA] [P]	[NA] [P]	[X] *					
COMPARE [: /] [и ј	[N]	[N]	[]					
RECOMMENDA	ATIONS:	(If d	ifferent	from NAS	SA)	•					
	. /] [1	[]		[DD/DELETE)					
* CIL RETE	ENTION 1	RATIONAL	E: (If a	applicable	e) ADEQUATE INADEQUATE	[]					
REMARKS: REF: RI/N 87.	NASA CI	L OF 12-	23-87 AN	ID RI/NAS	-	EET OF 11-23-					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/27/88 MPS-2003 0301-6		NASA DATA: BASELINE [] NEW [X]					
	MPS 2003 LH2 INBOARD I	FILL AND DRAIN VAL	VE (PV12)					
LEAD ANALYST:	W.J.MCNICOLL							
ASSESSMENT:								
CRITICAL FLIGH		NDANCY SCREENS	CIL ITEM					
HDW/FU	NC A	В С						
NASA [3 /1R IOA [3 /1R	[P]	[P] [P] [P] [P]	[] *					
COMPARE [/] []	[] []	[]					
RECOMMENDATIONS:	(If differe	ent from NASA)						
[/] []	[] []	[] (ADD/DELETE)					
* CIL RETENTION	RATIONALE: (I		UATE [] UATE []					
REMARKS: REF: RI/NASA CI	L WORKSHEET O	F 11-23-87.						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-2004	1	NASA DATA: BASELINE [] NEW [X]						
MDAC ID:	MPS 2004 LH2 INBO	DARD FI	LL AND DRA	LIN VALVE (PV	712)				
LEAD ANALYST:	W.J.MCN	COLL							
ASSESSMENT:				٠.					
CRITICAL: FLIGHT HDW/FUI	r	REDUNDA A	ANCY SCREE B		CIL				
NASA [3 /3 IOA [3 /1R] [NA] P]	[NA] [P]	[NA] [P]	[] *				
COMPARE [/N] [иј	[N]	[и]	[]				
RECOMMENDATIONS:	(If d	ifferen	t from NAS	SA)					
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* CIL RETENTION	RATIONALI	E: (If a	applicable	ADEQUATE	[]				
REMARKS: FROZEN H2 WOULD 'THROUGH THE RELIE REF: RI/NASA FM	EF SYSTE	M OR DUI	RING MPS I	NERT.	E VENTED				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-200	: [x]										
	2005	OARD FILL	AND DRA	IN VALVE (P	V12)							
LEAD ANALYST:	W.J.MCN	ICOLL										
ASSESSMENT:												
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C												
NASA [1 /1 IOA [1 /1] [NA] [NA] [NA] NA]	[NA] [NA]	[X] * [X]							
COMPARE [/] [] []	[]	[]							
RECOMMENDATIONS:	(If d	ifferent	from NAS	A)								
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* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []												
REMARKS:				INADEQUATE	į j							
	L OF 12-	23-87 AND	RI/NASA	CIL WORKSH	EET OF 11-23							

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-200			NASA DATA: BASELINE NEW	
MDAC ID:	MPS 2006 LH2 INB	OARD FILL	AND DRAIN	VALVE (PV	712)
LEAD ANALYST:	W.J.MCN	ICOLL			
ASSESSMENT:					
CRITICAL FLIGH HDW/FU	T	REDUNDANC	Y SCREENS	c c	CIL ITEM
NASA [2 /1R IOA [3 /3		P] [NA] [F] [NA] [P] NA]	[X] *
COMPARE [N /N] [и ј [и ј [n j	[и]
RECOMMENDATIONS:	(If d	ifferent f	rom NASA))	
[3 /3] [NA] [NA] [[D] DD/DELETE)
* CIL RETENTION	RATIONAL	E: (If app		ADEQUATE NADEQUATE	
REMARKS: VALVE FAILURE TO MAY CAUSE LAUNCE REF: RI/NASA CI 87.	SCRUB.				

ASSESSME ASSESSME NASA FME	NT ID:	1/27/88 MPS-200 0301-10	7	NASA DATA BASELINE NEW									
SUBSYSTEMDAC ID:		MPS 2007 LH2 INE	SOARD FILL	AND DRA	.in VALVE (F	V12)							
LEAD ANA	LYST:	W.J.MCN	ICOLL										
ASSESSME	NT:												
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C													
	HDW/FU	INC	A	В	С								
NASA IOA	[1 /1 [1 /1] [[NA] [[NA] [NA] NA]	[NA] [NA]	[X] * [X]							
COMPARE	[/] [[] []	[]	[]							
RECOMMEN	DATIONS:	(If d	different	from NAS	SA)								
	[/] [[] []	[]	[ADD/DELETE)							
* CIL RE	TENTION	RATIONAL	LE: (If ap	plicable	ADEQUATE	[]							
REMARKS: REF: RI 87.	/NASA CI	[L OF 12-	-23-87 AND	RI/NASA		() HEET OF 12-14-							

ASSESSMENT DATE: 1/ ASSESSMENT ID: MF NASA FMEA #: 03					-2011	L	NASA DATA: BASELINE [] NEW [X]						
NASA IMI	SA i	F		030	2-0					NE	W [2	١,	
SUBSYSTE MDAC ID: ITEM:				MPS 201: LH2		BOARD	FIL	L AND	DRA	IN VALVE	(PV1)	L)	
LEAD ANA	ALYS	ST	:	W.J	. MCNI	COLL							
ASSESSME	ENT	:		•							-		
	CRI		CAI LIGH			REDUN	DANG	CY SCR	REENS	5	CII		
	I			INC		A		В		C			
NASA IOA	[1	/1 /1]]	NA] NA]	[NA] NA]]	NA] NA]	{] {]	[] []	*
COMPARE	ſ		/]	Į.]	[]	[]	[]	
RECOMMEN	VDA'	ric	ons:	(If di	ffere	nt i	from N	IASA)				
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* CIL RE	ETEI	T]	ON	RATIO	ONALE	: (If	app	plicab	le)	ADEQUATE			
									IN	ADEQUATE	_]	
REMARKS: REF: RI 14-87.		AS?	CI	L OF	12-2	23-87	AND	RI/NA	SA C	CIL WORKS	HEET	OF	12=

ASSESSME ASSESSME NASA FME	NT I	D:	MPS-2	1/29/88 MPS-2012 0302-4					NASA DATA: BASELINE [] NEW [X]						
SUBSYSTE MDAC ID: ITEM:			MPS 2012 LH2 O							VALV	E (1	?V1	1)		
LEAD ANA	LYST	:	W.J.M	J.MCNICOLL											
ASSESSME	NT:														* 1
		ICAL LIGH	ITY	R	EDUN	IDAN	CY	SCR	EENS			CI			
			NC	A	•		В		С			1.1	'EM		
NASA IOA	[2 [2	/1R /1R]	[P]]	F P]	[P]		[X X	* 	
COMPARE	[/]	[]	[N]	[1		[]		
RECOMMEN	DATI	ons:	(If	dif	fere	ent i	fro	om N	ASA)						
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* CIL RE	TENT	ION 1	RATION	ALE:	(If	app	,1	cab							
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REMARKS: REF: RI 87.		A CI	L OF 1	2-23	-87	AND	R]	/NA	SA CI	L WOR	KSHI	ET	OF	' 1	1 - 23-

ASSESSMEI ASSESSMEI NASA FME	NT II	D:	MPS-2013 BASELINE					E []					
SUBSYSTEM MDAC ID:	M:		MPS 2013 LH2 OU										: .		
LEAD ANA	LYST	:	W.J.MC	.J.MCNICOLL											
ASSESSME	NT:														
(F	LIGH'				JNDANG			REENS			I	IL TEM	[
	HD	W/FU	NC		A		В			С					
NASA IOA	[2 [1	/1R /1]	[P] NA]	[[F N] A]	[P NA]	[X]	*
COMPARE	[]	/N]	[N]	[N)	[N]	[]	
RECOMMEN	DATI	ons:	(If	di	iffer	rent :	fr	om 1	NASA)					
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* CIL RE	TENT	ION :	RATION	ALI	E: (If ap	pl:	icak		ΑI	EQUATE EQUATE]	
VENTING REF: RI	TWO FAILURES ARE REQUIRED BEFORE MANIFOLD RUPTURE OR HAZARDOUS VENTING ARE POSSIBLE. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 11-24-														
87.															

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-2014	IPS-2014 BASELINE			
MDAC ID:	MPS 2014 LH2 OUTBOARD FILL	AND DRAIN VALVE (PV11)		
LEAD ANALYST:	W.J.MCNICOLL				
ASSESSMENT:					
FLIGH'			CIL ITEM		
HDW/FU	NC A	В С			
NASA [3 /3 IOA [3 /3] [NA] [] [P] [NA] [NA] P] [P]	[X] *		
COMPARE [/] [N][иј [и]	[]		
RECOMMENDATIONS:	(If different f	from NASA)			
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* CIL RETENTION	RATIONALE: (If app	olicable) ADEQUATE INADEQUATE	[]		
ABORTS. IOA CON	CURS.	TICALITY FOR RTLS RI/NASA CIL WORKSH	AND TAL		

ASSESSMEN' ASSESSMEN' NASA FMEA	T II):	MPS-2015					NASA DATA: BASELINE [] NEW [X]						
SUBSYSTEM MDAC ID: ITEM:	:		MPS 2015 LH2 O	JTI	BOARD	FILI	. <i>1</i>	ND I	DRAI	IN VALVE	(PV1	.1)		
LEAD ANAL	YST	:	W.J.M	CN]	COLL									
ASSESSMEN'	T:													
C		ICALI LIGHT	TTY T		REDU	NDANG	Y	SCRI	EENS	5	CI	L EM	[
	HDV	/FUN	1C		A		В			C				
NASA IOA	[2 [3	/1R /3]	[P] NA]	[[F NA]	[P] NA]	[X]	*
COMPARE	[N	/N]	[N]	[N]	[N]	[N]	
RECOMMEND	ATIO	ons:	(If	di	iffer	ent f	rc	m N2	ASA))				
-	[3	/3]	[NA]	[NA	.]	[[ADD/			TE)
* CIL RET	ENT]	ON F	RATION	ALI	E: (I:	f app	li	.cab]	•	ADEQUATE VADEQUATE]	
REMARKS: FAILURE TO CAUSE LAU	O CI	SCRU	JB.											
REF: RI/1	NAS	A CII	L OF 12	2-2	23-87	AND	RI	/NAS	SA C	CIL WORKS	HEET	' 0	F	11-23-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		BASEL	NASA DATA: BASELINE [] NEW [X]				
MDAC ID:	MPS 2016 LH2 OUTBOARD I	FILL AND DRAIN VALVE	E (PV11)				
LEAD ANALYST:	W.J.MCNICOLL						
ASSESSMENT:							
CRITICAL FLIGH		DANCY SCREENS	CIL ITEM				
HDW/FU	· 	в с	IIEM				
NASA [1 /1 IOA [1 /1] [NA]] [NA]	[NA] [NA] [NA]	[X] *				
COMPARE [/] []	[] []	[]				
RECOMMENDATIONS:	(If differer	nt from NASA)					
[/] []	[] []	[] (ADD/DELETE)				
* CIL RETENTION	RATIONALE: (If	applicable) ADEQUATION INADEQUATION ADEQUATION ADEQUATI	TE []				
REMARKS:	T OF 12 22 27 3						
REF: RI/NASA CI 87.	L OF 12-23-87 F	AND RI/NASA CIL WORE	SHEET OF 12-14				

ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:	MPS-202	1		NASA DATA BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM:	MPS 2021 LH2 FIL	L AND DRAI		w), 997	
LEAD ANALYST:	W.J.MCN	ICOLL			
ASSESSMENT:					
	LITY	REDUNDANC	Y SCREEN	IS	CIL ITEM
FLIC HDW/1	UNC	A	В	С	TIEM
NASA [1 /: IOA [1 /:] [NA] [NA] [NA] [NA] NA]	[X] *
COMPARE [/] [] [] [1	[]
RECOMMENDATIONS	: (If d	ifferent f	rom NASA	7)	
[/] [] [] [[] (A)	[] DD/DELETE)
* CIL RETENTION	RATIONAL	E: (If app		ADEQUATE NADEQUATE	[]
REMARKS: REF: RI/NASA (CIL OF 12-	23-87 AND			•

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/28/88 MPS-2022 NA	NASA DAT BASELIN NI	
SUBSYSTEM: MDAC ID: ITEM:	MPS 2022 LH2 FILL AND D	RAIN LINE (FH6)	
LEAD ANALYST:	W.J.MCNICOLL		
ASSESSMENT:			
CRITICAL: FLIGH HDW/FUI	r	ANCY SCREENS B C	CIL ITEM
·		[] [] [NA] [NA]	[] *
COMPARE [N /N] [N]	[N] [N]	[]
RECOMMENDATIONS:	(If differen	t from NASA)	
[3 /3] [NA]	[NA] [NA]	[] ADD/DELETE)
* CIL RETENTION I	-	applicable) ADEQUATE INADEQUATE	

ASSESSMENT II NASA FMEA #:):	1/28/8 MPS-20 0308-1	23	1				NASA DATA BASELINE NEW		
SUBSYSTEM: MDAC ID: ITEM:		MPS 2023 LH2 FI	LI	L AND DR	LA	N LINE	(1	FH6)		
LEAD ANALYST	;	W.J.MC	CN:	COLL						
ASSESSMENT:										
	CAL LIGH'	r		REDUNDA	NC	Y SCRE	ENS	5 C * * * **	CII	
	•		•		r	_	r		r	1 *
NASA [3 IOA [3	/3]	[NA] NA]	[NA]	[NA]	ĺ]
COMPARE [1]	[1	[1	[1	[]
RECOMMENDATIO	ons:	(If	đ	ifferent	: 1	from NA	SA))		
τ	/]	[1	[]	[] (A] DELETE)
* CIL RETENT	ION :	RATION?	ΑLI	E: (If a	pp	olicabl		ADEQUATE NADEQUATE	_]
REMARKS: REF: RI/NAS	A FM	EA/CIL	RI	EVIEW ME	Œ	TING NO	TE	s.		

ASSESSME ASSESSME NASA FME	NT ID:	MPS-203	MPS-2031 BASELINE						
SUBSYSTE MDAC ID: ITEM: (ORBITER			031 LH2 GROUND FILL AND DRAIN (ORB/GND)						
LEAD ANA	LYST:	W.J.MCN	.J.MCNICOLL						
ASSESSME	NT:								
ı	CRITICAL: FLIGH HDW/FU	r	REDUNDANC A	CY SCREENS B	c c	CIL			
NASA IOA	[1 /1 [1 /1] [NA] [NA] [NA] [NA] [NA] NA]	[X] *		
COMPARE	[/] [] [3 []	[1		
RECOMMEN	DATIONS:	(If d	ifferent 1	from NASA)				
÷	[/] [] [] [[[D / D C] ELETE)		
* CIL RE	TENTION 1	RATIONAL	E: (If app	olicable)			_		
				II	ADEQUATE NADEQUATE]		
REMARKS: REF: RI	/NASA CI	L OF 12-	23-87 AND	RI/NASA (CIL WORKSHI	EET (OF 12-14-		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/28/88 MPS-2031A 0303-6		1	NASA DATA: BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM: (ORBITER HALF) (1	MPS 2031 LH2 GROUN PD11)	ID FILL AND	DRAIN		DISCONNECT
LEAD ANALYST:	W.J.MCNIC	COLL			
ASSESSMENT:					
CRITICAL: FLIGHT HDW/FUI	r	REDUNDANCY B			CIL ITEM
NASA [1 /1 IOA [1 /1		IA] [NA IA] [NA	[] []	NA] NA]	[X] *
COMPARE [/] [] [] [1	[]
RECOMMENDATIONS:	(If dif	fferent fro	om NASA)		
[/] [] [] [] (AD	[] DD/DELETE)
* CIL RETENTION	RATIONALE:	: (If appli		ADEQUATE	[]
REF: RI/NASA CI 87.	L OF 12-23	3-87 AND R	/NASA C	IL WORKSHE	CET OF 12-14-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DA BASELI N	
MDAC ID:	MPS 2041 LH2 HI POINT	BLEED (ORB/GND) DISC	ONNECT (ORB
LEAD ANALYST:	W.J.MCNICOLL		
ASSESSMENT:			
CRITICAL FLIGH HDW/FU	T	DANCY SCREENS B C	CIL ITEM
·			
NASA [1 /1 IOA [1 /1] [NA]] [NA]	[NA] [NA] [NA] [NA]	[X] * [X]
COMPARE [/] []	[] []	[]
RECOMMENDATIONS:	(If differe	nt from NASA)	
. [/] []	[] []	[] (ADD/DELETE)
* CIL RETENTION	RATIONALE: (If	ADEQUAT	
DEWARDE.		INADEQUAT	E []
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87	AND RI/NASA CIL WORK	SHEET OF 11-13-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-2042		SA DATA: ASELINE [] NEW [X]
SUBSYSTEM: MDAC ID: ITEM: HALF) (PD17)	MPS 2042 LH2 HI POINT	BLEED (ORB/GND)	
LEAD ANALYST:	W.J.MCNICOLL		
ASSESSMENT:			
CRITICAL: FLIGHT		IDANCY SCREENS	CIL ITEM
HDW/FUI	NC A	ВС	
NASA [2 /1R IOA [2 /1R] [P]	[F] [P]	[X] *
COMPARE [/] []	[и] [и]	[]
RECOMMENDATIONS:	(If differe	ent from NASA)	
. [/] []	[] []	[] (ADD/DELETE)
* CIL RETENTION 1	RATIONALE: (If	ADE	EQUATE []
REMARKS: REF: RI/NASA CII 87.	L OF 12-23-87	AND RI/NASA CIL	WORKSHEET OF 11-13-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-2043	NASA DATA BASELIN NE	
MDAC ID:	MPS 2043 LH2 HI POINT	BLEED (ORB/GND) DISCO	NNECT (ORB
LEAD ANALYST:	W.J.MCNICOLL		
ASSESSMENT:			
CRITICAL FLIGH	T	IDANCY SCREENS	CIL ITEM
HDW/FU	NC A	ВС	
NASA [2 /1R IOA [2 /1R] [P]] [P]	[F] [P] [P] [F]	[X] * [X]
COMPARE [/	1 []	[и] [и]	[]
RECOMMENDATIONS:	(If differe	ent from NASA)	
. [/] []	[] [] ([] ADD/DELETE)
* CIL RETENTION REMARKS:	RATIONALE: (If	F applicable) ADEQUATE INADEQUATE	
	L OF 12-23-87	AND RI/NASA CIL WORKS	HEET OF 11-13-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/28/88 MPS-2044 0432-5	NASA DATA: BASELINE [NEW [X									
MDAC ID:	MPS 2044 LH2 HI POINT B	LEED (ORB/G	ND) DISCON	VECT (ORB							
LEAD ANALYST:	W.J.MCNICOLL										
ASSESSMENT:											
CRITICAL FLIGH HDW/FU	T	ANCY SCREEN	S	CIL ITEM							
NASA [3 /3 TOA [3 /3] [NA]	[AN] [AN]	NA] NĀ]	[-] *							
COMPARE [/] []	[] [J	[] · ····							
RECOMMENDATIONS:	(If different	t from NASA)								
. [/] []	[] [] (AI	[] DD/DELETE)							
* CIL RETENTION : REMARKS: REF: RI/NASA FM	RATIONALE: (If a	I	ADEQUATE NADEQUATE								

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:				NASA DATA BASELINE NEW							
MDAC ID:	MPS 2051 LH2 REPLE	ENISH VALV	E (PV13)							
LEAD ANALYST:	W.J.MCNIC	COLL									
ASSESSMENT:											
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM											
HDW/FU	_	A B	,	С	IIEM						
NASA [2 /1R IOA [3 /1R] [I	P] [F P] [P] [P] P]	[X] * []						
COMPARE [N /] [] [N] []	[N]						
RECOMMENDATIONS:	(If dif	fferent fr	om NASA)							
[/] [] [] [] (AI	[] DD/DELETE)						
* CIL RETENTION	RATIONALE:	: (If appl	_	ADEQUATE NADEQUATE							
REMARKS: REF: RI/NASA CI	L OF 12-23	3-87 AND R		~	EET OF 11-11-						

ASSESSME ASSESSME NASA FME	NT :	ID:		MPS-2052 BASELINE [
SUBSYSTE MDAC ID: ITEM:	M:		MPS 2052 LH2 R	EPL	ENISH	VALV	/E (P	V13)			:			
LEAD ANA	LYS!	r:	W.J.M	CNI	COLL									
ASSESSME	NT:													
		FICAL			REDUN	DANCY	SCR	EENS			CII			
		FLIGH DW/FU			A	F	3		C -			.PI		
NASA IOA	[:	3 /3 3 /3]	[NA] NA]	1] 1]	IA] IA]	[NA] NA]		[]	*	
COMPARE	[/	1	[]	[]	[)		[]		
RECOMMEN	DAT:	ions:	(If	đi	ffere	nt fi	om N	ASA)			÷			
-	[/	1	[1	[]	. []	(Al	[DD/I) DELE	TE)	
* CIL RE	TEN	TION	RATION	ALE	: (If	app]	licab		ADEQU <i>I</i> ADEQU <i>I</i>		[]		
REMARKS:	/N73.	CA PM	EN /CTT.	DF	VTEW	MEETT	nc n	OTES						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/28/88 MPS-205 0304-1	3	NASA DATA BASELINE NEW		
MDAC ID:	MPS 2053 LH2 REP	LENISH VA	ALVE (PV13)	
LEAD ANALYST:	W.J.MCN	ICOLL			
ASSESSMENT:					
CRITICAL FLIGH		REDUNDAN	ICY SCREEN	S	CIL ITEM
HDW/FU		A	В	С	
NASA [2 /1R IOA [3 /1R] [P] [[F] [[P] [P] P]	[X] * []
COMPARE [N /] [] [[и]]	[N]
RECOMMENDATIONS:	(If d	ifferent	from NASA	.)	
[2 /1R] [P] [[P] [P] (A	[] DD/DELETE)
* CIL RETENTION	RATIONAL	E: (If ap	- -	ADEQUATE NADEQUATE	
REMARKS: MANIFOLD PRESSUR B.	E INDICA	TOR AND A	ALARM SUPP	ORTS PASSA	•
	L OF 12-	23-87 ANI	O RI/NASA	CIL WORKSH	EET OF 11-11

ASSESSM ASSESSM NASA FM	ENT	I	D:		MPS	PS-2054									BASEI	2 2 2	[÷ 4	
SUBSYST MDAC ID ITEM:					MPS 205 LH2	4	EPI	LEN	vish	VAI	LVI	E (1	PV13))						
LEAD AN	ALY	ST	:	1	W.J	. MC	CN3	CC	DLL											
ASSESSM	ENT	:																		
		₽.	TO	יתנו									REENS	3			CI	L EM		
		HD	W/F	מטי	С			A			В			С						
NASA IOA	[2	/1 /1	.R .R]]	P P]	ָ [F P]	[P P]		[]	X] X]	*	
COMPARE	[/]		Ĺ]	[N]	[]		[]		
RECOMME	NDA	TI	ONS	:	(ΙΪ	di	Ĺfí	ere	nE i	fro	om 1	NASA)	j						
	[/)		[3	[]	Ţ]	(AI		DEL	ETE)	
* CIL R	ETE	NT	ION	R	ATI	ONA	LE	₹:	(If	app	91 :	ical		ΑI	DEQU <i>P</i> DEQU <i>P</i>	TE	ſ	1		
REMARKS REF: R 87.		IAS.	A C	ÏL	OF	12	? – 2	23-	-87	AND	R	E/NZ	ASA (CII	WOF	KSHI	ET	OF	11-	-11-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-2055	NASA DATA BASELINI NEV										
MDAC ID:	MPS 2055 LH2 REPLENISH	VALVE (PV13)										
LEAD ANALYST:	W.J.MCNICOLL											
ASSESSMENT:												
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM												
	FLIGHT HDW/FUNC A B C											
NASA [1 /1 IOA [1 /1] [NA]] [NA]	[NA]										
COMPARE [/] []	[] []	[]									
RECOMMENDATIONS:	(If differe	ent from NASA)										
[/] []		[] ADD/DELETE)									
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []												
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87	AND RI/NASA CIL WORKS	HEET OF 11-11-									

ASSESSMI ASSESSMI NASA FMI	ENT	I	D:	MP	28/8 S-20 31-1	6	L			NASA DATA: BASELINE [] NEW [X]							
SUBSYSTI MDAC ID: ITEM:				MP 20 LH	61	[]	POI	NT E	3LE	ED	V.	LVE	(PV22)			
LEAD ANA	\LYS	ST	:	W.	J.MC	N.	[CO	LL									
ASSESSME	ent:	:															
		F	ICAL LIGH W/FU	T			REI		AN	CY B		REENS	C		CI IT	L EM	
			•														
NASA IOA	[3 3	/3 /3]		[NA NA]	[N N	A]	[NA]		[[]	*
COMPARE	[/]		[]	[]	[]		[]	
RECOMMEN	IDA!	ΓI	ons:		(If	d:	iff	erer	it	fr	om	NASA))				
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* CIL RI	-	NT.	ION	RAT	IONA	\LI	Ξ:	(If	ap	pl	ica			UATE UATE]	
REF: RI	[/N/	AS	A FM	EA/	CIL	RI	EVI	EW M	EE	TI	NG	NOTES	3.				

ASSESSMI ASSESSMI NASA FMI	ENT	II		MPS-2062 BASELIN									[x]							
SUBSYSTI MDAC ID: ITEM:				MP 20 LH		: 1	PO I	:NT	BL	ΕI	ΕD	VA:	LVE	((PV	(22))				-	
LEAD ANA	ALYS	ST:	:	w.	J.MC	:N:	CC	LL	ı						-						-	
ASSESSMI	ENT:	:																				
		F	ICAL: LIGH: N/FUI	r	•		RE A	DU	NDA	NC	EY B	SC	REE	NS	c					IL PEM	1	
NASA IOA]	1 2	/1 /1R]		[NA P]]	NA F]		[[NA F	.]]	X X]	*
COMPARE	[N	/N]		[N]		[N]		[N]			[-]	
RECOMMEN	NDA!	ric	SNC:		(If	d :	iff	er	ent	. 1	fro	m 1	nas.	A)	1							
-	[/]		[]		[]		[]		(AI] (D)] ELI	ete;
* CIL RI	:																JAT: JAT:		[]	
REF: R	r/ N4	NO1	A CI	ש ע) II	لعت		r l	т.	-12	-0	<i>'</i> •									

ASSESSME ASSESSME NASA FME	ENT I	D:	1/28, MPS-2 0431	2063		NASA DATA: BASELINE [] NEW [X]								
SUBSYSTEMDAC ID:			MPS 2063 LH2 I	HI PO	INT	BLEE	D VAL	VE (I	V22)					
LEAD ANA	LYSI	:	W.J.1	ICNIC	OLL									
ASSESSME	ENT:													
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C														
	nL	JW/FU					_							
NASA IOA		/1]	[N	A] A]	[]	NA] NA]	7] 7]			<pre>{] </pre>	[]	*	
COMPARE	[/	1	[]	[]	[]		[]		
RECOMMEN	IDATI	ons:	(II	f dif	fere	nt f	rom N	ASA)						
-	[/]	[]	Ţ]	[]	(AI	[DD/E	j ELI	ETE)	
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []														
REF: RI		A CI	L OF	L2-23	-87	AND :	RI/NA	SA CI	L WOR	KSHI	EET	OF	11-12-	

ASSESSMI ASSESSMI NASA FMI	ENT I	D:	MPS	-2071	L				LINE	DATA: LINE [] NEW [X]					
SUBSYSTI MDAC ID: ITEM:			MPS 2071 LH2		EM DE	LTA-	P TRA	MSDU	CER (MT44	, M	T50))		
LEAD ANA	ALYSI	r:	W.J	. MCNI	COLL										
ASSESSMI	ENT:														
					REDUN	DANC	Y SCR	REENS			CI				
		FLIGH DW/FU	NC		A		В		c		IT	EM			
NASA IOA	[]	l /1 l /1]	[NA] NA]	[[NA] NA]	[NA] NA]		[x] x]	*		
COMPARE	[/]	Į.]	[]	[]		[]			
RECOMMEN	(DAT	ons:	(:	If di	ffere	nt f	rom N	IASA)							
-	[1]	[]	[]	C]	(A)		DEI	ETE		
* CIL RI	ETENI	MOI	RATIO	ONALE	: (If	app	licab		3 DE 641						
								IN	ADEQU ADEQU	ATE ATE	[)]			
REMARKS: FOR MT44 FMEA/CII	ONI					CIL	OF 12	-23-	87 AN	D RI,	/NA	SA			

ASSESSMEI ASSESSMEI NASA FME	NT I	D:		2072	NASA DATA: BASELINE [] NEW [X]										
SUBSYSTEM MDAC ID:	M:		MPS 2072 LH2	SYSTE	M DE	LTA-1	P TRA	NSDU	JCER	(MT44	, MT	r 50)			
LEAD ANA	LYSI	P:	W.J.	MCNIC	OLL										
ASSESSME	NT:														
•		ricai Ligh	ITY	R	EDUN	DANC	SCF	REENS	5		CII				
			NC	A		1	3		С						
NASA IOA	[3	3 /3]	[N	A] A]	[]	NA] NA]	[[NA] NA]		[] *			
COMPARE	[/]	[]	[]	[]		[]			
RECOMMEN	DATI	ons:	(1	f dif	fere	nt fi	com N	IASA)	ı						
-	[/]	C]	[]	[]	(A] DELETE)			
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FOR MT44	ONI	LY.	REF:	RI/N	ASA	FMEA/	CIL	REV]	EW M	EETIN	G NO	OTES.			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-208			NASA DATA BASELINE NEW	
MDAC ID:	MPS 2081 LH2 HI	POINT BLE	ED LINE ((FH19)	
LEAD ANALYST:	W.J.MCN	ICOLL	ı	L L .	
ASSESSMENT:					
CRITICAL FLIGH		REDUNDANC	CY SCREEN	ıs	CIL ITEM
	NC	A	В	С	
NASA [1 /1 IOA [1 /1] [NA] [NA] [NA] [NA] NA]	[X] * [X]
COMPARE [/] [] [] []	[]
RECOMMENDATIONS:	(If d	ifferent i	from NASA	7)	
] [] [] [[] DD/DELETE)
* CIL RETENTION REMARKS:	RATIONAL	E: (If app	•	ADEQUATE NADEQUATE	[]
THIS ANALYSIS IS REF: RI/NASA CI 87.					EET OF 6-17-

ASSESSMI ASSESSMI NASA FMI	ENT I	D:	1/28 MPS- 0430	2081	L A			ì	NASA I BASEI	LINE]	
SUBSYSTI MDAC ID: ITEM:			MPS 2081 LH2		POINT	BLEI	ED LIN		H19)		a i v		
LEAD AND	ALYST	!:	W.J.	MCNI	COLL								
ASSESSMI	ENT:												
		'ICAL	ITY T		REDU	NDANG	CY SCR	REENS			CIL		
	_		NC		A		В	C	2				
NASA IOA	[1 [1	/1]]	NA] NA]]	NA]	[]	NA] NA]	-	X]]	*
COMPARE		/]	[1	נ]	[]		[]	
RECOMME	NDATI	ons:	(1	f di	ffer	ent i	from N	IASA)					
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REMARKS THIS AND REF: R	ALYSI	S IS A CI	FOR L OF	THE 12-2	FORM	INSU	JLATED RÍ/NA	LINE	B.,		eet -	OF	6-17-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/28/88 MPS-2082 NA			[[x]
SUBSYSTEM: MDAC ID: ITEM:	MPS 2082 LH2 HI POINT B	LEED LINE (FH19)		
LEAD ANALYST:	W.J.MCNICOLL			rry .	
ASSESSMENT:					
CRITICAL FLIGH		ANCY SCREEN	S	CIL ITEM	
HDW/FU	NC A	В	С		
NASA [/ IOA [3 /3] []] [NA]	[] [[NA]	NA]	[] *]
COMPARE [N /N] [N]	[N] [N]	C]
RECOMMENDATIONS:	(If differen	t from NASA	.)		
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* CIL RETENTION	RATIONALE: (If		ADEQUATE NADEQUATE	[ļ
REMARKS:		•	MADEQUATE	L	1

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SUBSYSTE MDAC ID: ITEM:		MPS 2083 LH2 HI F	POINT BL	EED LINE	(FH19)	
LEAD ANA	LYST:	W.J.MCNI	COLL			
ASSESSME	NT:					
	CRITICAL		REDUNDA	NCY SCREE	ens	CIL
	FLIGHT HDW/FUI		A .	В	C	ITEM
NASA IOA	[/] [] NA]	[] [NA]	[] [NA]	[] * [x]
COMPARE	[N /N] [N J	[N]	[N]	[N]
RECOMMEN	DATIONS:	(If di	fferent	from NAS	SA)	
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* CIL RE	TENTION I	RATIONALE	: (If a	pplicable	•	
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ASSESSMI ASSESSMI NASA FMI	ENT I	D:		-2091					NASA BASE	LINE		,] k]	
SUBSYSTEMDAC ID:			MPS 209: LH2		RCUL!	ATIOI	N DISC	ONNE	CT VA	LVE	(PD3	3)	
LEAD ANA	LYSI	? :	W.J	. MCNI	COLL								
ASSESSME	ENT:												
	F	CICAL CLIGH OW/FU			REDUN A	IDAN(CY SCR B		C ·		CII		
NASA IOA		/3]	[]	NA] NA]	[NA] NA]	[]	NA] NA]		[]	*
COMPARE	[/]	[]	[]	[]		[]	
RECOMMEN	DATI	ONS:	(1	f di	ffere	ent i	from N	ASA)					
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* CIL RE REMARKS: REF: RI								INZ	ADEQUZ ADEQUZ		[]	
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ASSESSMEN ASSESSMEN NASA FMEA	T II):	MPS-20	92	2							SA DATA ASELINE NEW	[]		
SUBSYSTEM MDAC ID: ITEM:	[:		MPS 2092 LH2 RE	ECI	IRC	ULAT	(O)	I E	oisco	ONNE	CI	VALVE	(PC	3)	4		
LEAD ANAI	YST	:	W.J.M	CN]	CO	LL											
ASSESSMEN	T:																
C		ICAL: LIGH:			RE	DUND	ANC	CY	SCR	EENS	3		CI IT	L EM	,		
	_		NC L		A			В			С						
NASA IOA	[2 [3	/1R /3]	[P NA]	[F N2] A]]	P NA]	[X]	*	
COMPARE	[N	/N]	[N]	[N]	[N	1	[N]		
RECOMMENI	OATI	ons:	(If	d	iff	eren	t :	fro	om N.	ASA))						
-	[/	1	[]	[]	[] (2		DE		ETE)	
* CIL RE	rent	ION	RATION	ΑL	E:	(If	ap)	p1	icab		AI	DEQUATE DEQUATE	L]		
REMARKS: RELIEF V REF: RI	ALVE /NAS	(RV A CI	7) PRO	VI 2-	DES 23-	RED 87 A	UN ND	DA R	NCY. I/NA	SA ·	CI	L WORKS	HEE!	ני כ	F	11-	17-

ASSESSME ASSESSME NASA FME	NT I	D:		-2093		NASA DATA: BASELINE [] NEW [X]							
SUBSYSTE MDAC ID: ITEM:			MPS 209: LH2	· ·	LATIO	N DISC	CONNECT V	LVE (PD3)			
LEAD ANA	LYSI	r:	W.J	.MCNICOL	L					*			
ASSESSME	NT:												
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C													
	HI)W/FU	NC	A		В	С						
NASA IOA	[]	1 /1]	[NA] [NA]]	NA]	[NA] [NA]	-	[X [X]	*		
COMPARE	נ	/]	[]	C]	[]		[]			
RECOMMEN	DATI	ons:	(:	If diffe	rent	from N	(ASA)						
-	[/]	[]	[]	[]	(AD	[D/DI		ΓE)		
* CIL RE	TENI	NOI	RATI(ONALE: (If app	plicab	ole) ADEQU INADEQU		[[]			
REMARKS:	/NAS	SA CI	L OF	12-23-8	7 AND	RI/NA	SA CIL WO			of :	11-11-		

ASSESSMI ASSESSMI NASA FMI	ENT I			2094				NASA DAT BASELIN NE		······································
SUBSYST: MDAC ID ITEM:			MPS 2094 LH2		CULATIO	N DISCO	NNE	CT VALVE	(PD3)	
LEAD AN	ALYST	:	W.J.	MCNIC	OLL					
ASSESSM	ENT:									
		ICAL		R	EDUNDAN	CY SCRE	ENS	5	CIL ITEM	
	HD	W/FU	NC	A		В		C		
NASA IOA	[1	/1]	[N.	A] [A] [NA] NA]]	NA]	[X]) *]
COMPARE	[/]	[] []	[]	[]
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* CIL R		ION	RATIC	NALE:	(If ap	plicabl	.e) IN	ADEQUATE VADEQUATE	[]
REMARKS REF: R 87.		A CI	L OF	12-23	-87 AND	RI/NAS		CIL WORKS		F 11-18-

ASSESSMI ASSESSMI NASA FMI	ENT I	D:	MPS-	2094	4A		A: E [] W [X]					
SUBSYSTI MDAC ID: ITEM:			MPS 2094 LH2	REC	IRCUL	ATIO	N DIS	SCONN:	ECT VALVI	E (PD	3)	
LEAD ANA	ALYST	:	W.J.	MCN	COLL							
ASSESSMI	ENT:											
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C												
	HD	W/FU	NC		A		В		С			
NASA IOA	[1 [1	/1 /1]]	NA] NA]	[NA] NA]	[NA] NA]	[]	x] x]	*
COMPARE	[/]	C]	[]	C]	[)	
RECOMMEN	IDATI	ons:	(Ii	f di	ffere	ent i	from	NASA)			
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* CIL RE	TENT	ION 1	RATION	IALE	: (Îſ	app	olica	ble)				
REMARKS:								I	ADEQUATE IADEQUATE]	
		A CI	L OF 1	L2 - 2	3-87	AND	RI/N	ASA (CIL WORKS	HEET	OF	11-11-

ASSESSMEN ASSESSMEN NASA FME	II TV		1/29/ MPS-2 0403-	101					NASA DAT BASELIN NE			
SUBSYSTEM MDAC ID:	M:		MPS 2101 LH2 F	ECI	RCULAT	ION	I PUMP	VAI	VE (PV14	, PV1	5,	PV16)
LEAD ANA	LYST	:	W.J.M	ICN I	COLL							
ASSESSME	NT:											
•			ITY		REDUND	ANC	Y SCR	EENS	3	CIL		
		LIGH W/FU			A		В		С		•••	
NASA IOA	[3	/3 /3]	[NA] NA]	[NA] NA]	[NA] NA]	[]	*
COMPARE	[/]	[3	[]	ľ]	[]	
RECOMMEN	DATI	ons:	(Ii	E di	ifferen	t 1	from N	IASA)	• • • • • • • • • • • • • • • • • • • •			
	[/]	[. 1	[]	[]	[(ADD/I) ELI	ETE)
* CIL RE	TENT	ION	RATIO	IAL l	E: (If	app	plicak		ADEQUATI	S []	
REMARKS: REF: RI	/NAS	A FM	EA/CI	L R	EVIEW M	ŒE.	ring n	OTES	3. ti			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			NASA DATA BASELINE NEW	
	MPS 2102 LH2 REC	IRCULATION PUMP V	ALVE (PV14,	PV15, PV16)
LEAD ANALYST:	W.J.MCN	ICOLL		
ASSESSMENT:				
CRITICAL FLIGH		REDUNDANCY SCREE	NS	CIL ITEM
	NC	A B	C	IIDM
NASA [2 /1R IOA [3 /3] [P] [F] NA]	[P] [NA]	[x] *
COMPARE [N /N] [и] [и]	[N]	[N]
RECOMMENDATIONS:	(If d	ifferent from NAS	A)	
[3 /3] [NA] [NA]	[NA]	[] DD/DELETE)
* CIL RETENTION	RATIONAL	E: (If applicable) ADEQUATE INADEQUATE	[]
FAILURE CITED (F	EED LINE	LITY APPLIES TO A LEAK) IS NOT A R 23-87 AND RI/NASA	BORT ONLY. EDUNDANCY T	THE SECOND O THE VALVE.

ASSESSME ASSESSME NASA FME	NT II		1/29/8 MPS-2: 0403-6	10:	3			N	ASA DATA BASELINE NEW	֓֞֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	x]	
SUBSYSTEMDAC ID:	M:		MPS 2103 LH2 R	ECI	IRCULA!	rion	I PUMP	VALV	Æ (PV14,	PV	715,	PV16)
LEAD ANA	LYST	:	W.J.M	CN:	COLL				-			
ASSESSME	NT:											
	CRIT:	ICAL: LIGH			REDUNI	DANC	CY SCRI	EENS		CI	L EM	
	. 1 111				A		B	C				
NASA IOA	[1	/1 /1]	[NA]]	NA] NA]	[N	IA] IA]	[[x]	*
COMPARE	C	/]	[]	[]	[]	[]	
RECOMMEN	DATIC	ONS:	(If	đ	ffere	nt f	rom NA	ASA)				
-	[/]	[1	[1	[] (A	_	DELI	ETE)
* CIL RE	TENT:	ION I	RATION	ALI	E: (If	app	olicabl	A	DEQUATE	_]	
REMARKS:	/373 C3		. 00 1									

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA BASELINI NEV									
	MPS 2111 LH2 PRESTART (CONDITIONING MANIFOLD	(MA3)								
LEAD ANALYST:	W.J.MCNICOLL										
ASSESSMENT:											
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM											
HDW/F		ВС									
NASA [1 /1 IOA [1 /1] [NA]] [NA]	[NA] [NA] [NA] [NA]	[X] * [X]								
COMPARE [/] []	[] []	[]								
RECOMMENDATIONS	(If differen	nt from NASA)									
] []	[] []	[] ADD/DELETE)								
* CIL RETENTION	RATIONALE: (If	applicable) ADEQUATE INADEQUATE									
REMARKS: REF: RI/NASA C	L OF 12-23-87	AND RI/NASA CIL WORKS	HEET OF 11-13-								

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			ra: ve [] ew [x]
MDAC ID:	MPS 2112 LH2 PRESTART	CONDITIONING MANIFOLD	O (MA3)
LEAD ANALYST:	W.J.MCNICOLL		
ASSESSMENT:			
CRITICAL: FLIGHT		NDANCY SCREENS	CIL ITEM
	NC A	В С	IICM
NASA [1 /1 IOA [1 /1] [NA]] [NA]	[NA] [NA] [NA]	[X] * [X]
COMPARE [/] []	[] []	[]
RECOMMENDATIONS:	(If differe	ent from NASA)	
[/] []	[] []	[] (ADD/DELETE)
* CIL RETENTION 1	RATIONALE: (If	f applicable) ADEQUATI INADEQUATI	3 [] 3 []
REMARKS: REF: RI/NASA CII 87.	L OF 12-23-87	AND RI/NASA CIL WORKS	

SUBSYSTEM: MPS MDAC ID: 2113 ITEM: LH2 PRESTART CONDITIONING MANIFOLD (MA3)	
LEAD ANALYST: W.J.MCNICOLL	
ASSESSMENT:	,
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM	
HDW/FUNC A B C	
NASA [/] [] [] [] [] [] IOA [3 /3] [NA] [NA] [NA] [NA]	*
COMPARE [N/N] [N] [N] [N]	
RECOMMENDATIONS: (If different from NASA)	
[3/3] [NA] [NA] [] (ADD/DELE	ΓE)
* CIL RETENTION RATIONALE: (If applicable)	
ADEQUATE [] INADEQUATE []	

ASSESSMEN ASSESSMEN NASA FME	T	ID		MPS	29/88 NASA DATA: 5-2114 BASELINE [09-1 NEW [X									
SUBSYSTEM MDAC ID:	M:			MPS 211 LH2	4	START	CONI	OITIC	NING	MANIF	OLD	(MA3	1)	
LEAD ANA	LYS	T:		W.5	r.McN	ICOLL								
ASSESSME	NT:	:										-		
ı	CR1		CAL	ITY		REDU	NDAN	CY SC	REENS	5		CII		
	F		-	NC		A		В		С				
NASA IOA			/3 /3		[]	NA] NA]	[NA] NA]	[NA] NA]		[]	*
COMPARE	[/]	[]	[]	[]		[]	
RECOMMEN	DAT	ric	ons:		(If d	iffer	ent :	from	NASA)				
	[/)	[]	ſ]	[]	(A	[DD/I) DELE	ETE)
* CIL RE	TEI	NT]	ION	RAT:	IONAL	E: (I	f ap	plica		ADEQU NADEQU	ATE	[]	
REMARKS: REF: RI	/N	ASZ	A FM	ŒA/	CIL R	EVIEW	MEE	TING	NOTE	5.		,		

ASSESSME ASSESSME NASA FME	NT ID:		-2121			NASA DAT BASELIN NI]
SUBSYSTE MDAC ID: ITEM: FH15)		MPS 2121 LH2	=	CONDIT	CONING	PUMP LIN	VE (FH:	ll, FH13
LEAD ANA	LYST:	W.J.	MCNICOLL	1				
ASSESSME	NT:							
		CALITY	REDU	NDANCY S	CREEN	S	CIL	7
		FUNC	A	В		С	1111	•
NASA IOA	[1 /	(1] (1]	[NA] [NA]	[NA] [NA]]	NA] NA]	[X [X] *
COMPARE	[/	']	[]	[]	[1	[]
RECOMMEN	DATION	ıs: (1	f differ	ent from	n NASA)		
-	[/	' 1	[]	[]	[[ADD/DI] ELETE)
* CIL RE	TENTIC	N RATIO	NALE: (I	f applic	able)		_	_
					I	ADEQUATE ADEQUATE]
REMARKS: REF: RI 87.	/NASA	CIL OF	12-23-87	AND RI/	'NASA (CIL WORKS	HEET C	F 4-23-

ASSESSM ASSESSM NASA FM		1/29/8 MPS-21 NA				ASA DATA BASELINE NEW]
SUBSYST MDAC ID ITEM: FH15)	:	2122	ESTART C	ONDITIONI	NG P	JMP LINE	(FH1	1, FH13,
LEAD AN	ALYST:	W.J.MC	NICOLL					
ASSESSM	ENT:							
	CRITICAL: FLIGHT HDW/FU	r	REDUND A	ANCY SCRE	ENS C		CIL ITEM	
NASA IOA	[/]	[] [NA]	[] [NA]	[N2] A]	[] *
COMPARE	[N /N]	[N]	[14]	[N]	[]
RECOMME	NDATIONS:	(If	differen	t from NA	SA)			
	[3 /3]	[NA]	[NA]	[N2		[DD/DE] LETE)
* CIL R	ETENTION 1	RATIONA	LE: (If	applicabl	AI	DEQUATE DEOUATE	## / TV/	en errodi siner.]

REMARKS:

ASSESSME ASSESSME NASA FME	NT ID:	1/29 MPS- 0421	2123		NASA DATA BASELINI NEV]
SUBSYSTE MDAC ID: ITEM: FH15)		MPS 2123 LH2		CONDITION	IING PUMP LINI	Е (FH	и1, FH13
LEAD ANA	LYST:	W.J.	MCNICOLL				
ASSESSME	INT:						
	CRITICA FLIC HDW/F		REDU A	NDANCY SCF B	REENS C	CIL	
NASA IOA	•			[NA] [NA]	-	[] *
COMPARE	[/	3	[]	[]	[]	[]
RECOMMEN	DATIONS	3: (I	f differ	ent from N	(ASA)		
-	[/]	[]	[]	[]	[ADD/D] ELETE)
* CIL RE		RATIO	NALE: (I	f applicab	ole) ADEQUATE INADEQUATE	•]
REF: RI	/NASA E	MEA/CI	L REVIEW	MEETING N	OTES.	•	

ASSESSME ASSESSME NASA FME	NT I	D:	MPS-	2131					NASA DASEL				
SUBSYSTE MDAC ID: ITEM: FH14, FH			MPS 2131 LH2	PREST	ART	CONE	OITION	ING	RETURN	LIN	E (FH1	.2,
LEAD ANA	LYST	:	W.J.1	MCNIC	OLL								
ASSESSME	NT:												-
		ICAL LIGH	ITY	Ŗ	EDUN	DANC	CY SCR	EENS	;		CIL ITE		
			NC	A			В		C				
NASA IOA	[1	/1 /1]	[N	IA] IA]	[NA] NA]	[NA] NA]		[X]	*
COMPARE	(/]	[]	[]	ĺ	1		[]	
RECOMMEN	DATI	ons:	(I:	f dif	fere	ent f	rom N	ASA)					
-	[/]	[]	[]	[]	(AD	[D/D] ELF	TE)
* CIL RE	TENT	ION	RATIO	NALE:	(If	app	olicab		ADEQUA		[]	
REMARKS: REF: RI		a ct	፣. ሰ ፑ '	12-23	1 -87	ΔŃD	DT/NA		'ADEQUA'		ET.	•	4-23-
87.	./ MAO	A CI	u or .	16 -63	, ,,	AND	***\ 14U	<i>51</i> 1 C				-	

ASSESSME ASSESSME NASA FME	NT I	D:	MPS	PS-2132 BASELINE []								
SUBSYSTE MDAC ID: ITEM: FH14, FH			MPS 213 LH2									
LEAD ANA	NALYST: W.J.MCNICOLL											
ASSESSME	NT:											
		'ICAL	ITY	RE	DUNDAN	CY SCR	EENS		CII			
	_		NC	A		В	c	2	411			
NASA IOA	[1	/1]	[NA [NA] [NA] NA]	[N	IA] IA]	[3	(] * (]		
COMPARE	[/]	[] []	[]	[]		
RECOMMEN	DATI	ons:	(If diff	erent	from N	ASA)					
-	[/]	[] []	[] (2] DELETE)		
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []												
REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 4-23-87.												

ASSESSME ASSESSME NASA FME	NT ID:	1/29/ MPS-2 NA			NASA DA BASELI N	
SUBSYSTE MDAC ID: ITEM: FH14, FH		MPS 2133 LH2 P	RESTART C	CONDITION	ING RETURN	LINE (FH12,
LEAD ANA	LYST:	W.J.M	CNICOLL			
ASSESSME	NT:					F. W. C.
	CRITICA: FLIG HDW/F	HT	REDUNI A	B	eens C	CIL ITEM
NASA IOA	[3 /3]	[] [NA]	[NA]	[] [AN]	*.[] []
COMPARE	[N /N	1	[N]	[N]	[и]	[]
RECOMMEN	DATIONS	: (If	differer	nt from N	ASA)	
	[3 /3]	[NA]	[NA]	[NA]	[] (ADD/DELETE)
* CIL RE	ورود د معلقت المداد	RATION	ALE: (If	applicab	le) ADEQUAT INADEQUAT	PE []

ASSESSMENT ID:	· · · · · · · · · · · · · · · ·								
MDAC ID:	MPS 2134 LH2 PRE	START CON	IDITIONING	RETURN LI	NE (FH12,				
LEAD ANALYST:	W.J.MCN	ICOLL							
ASSESSMENT:									
CRITICAL FLIGH HDW/FU	T	REDUNDAN A	ICY SCREEN	rs C	CIL ITEM				
NASA [/ IOA [3 /3] [NA] [] [NA] [NA]	[] *				
COMPARE [N /N] [N] [[и]	N]	[]				
RECOMMENDATIONS:	(If d	ifferent	from NASA	.)					
[3 /3] [NA] [NA] [NA]	[DD/DELETE)				
* CIL RETENTION REMARKS:			I	ADEQUATE NADEQUATE	[]				
REF: RI/NASA FM	EA/CIL R	EVIEW MEE	TING NOTE	S.					

ASSESSME ASSESSME NASA FME	NT I	D:	MPS-	2141					BASE	* Armer / Charges (A)	[en en e _g er <u>ete</u>
SUBSYSTE MDAC ID: ITEM:			MPS 2141 LH2	PRES	TART	CONI	OITIO	IING	REPLE	NISH	LIN	IE (FH17)
LEAD ANA	LYST	!:	W.J.	MCN1	COLL								
ASSESSME	NT:												
		ICAL	ITY T		REDU	NDAN	CY SCI	REENS	5		CII		
	_	_	NC		A		В		C				
NASA IOA	[1	/1]] [NA] NA]	[NA] NA]	[NA] NA]		[]	[] []	*
COMPARE	[/]	[]	[1	[1		[]	
RECOMMEN	IDATI	ons:	(1	[f di	ffer	ent :	from 1	NASA)				
	[/	3	[1	[3	[]	(A) DELI	ETE)
* CIL RI	ETENT	NOI	RATIO	ONALI	E: (I	f ap	plical		ADEQU NADEQU]	
REMARKS: REF: RI 87.	: I/NAS	SA CI	L OF	12-2	23-87	AND	RI/N	ASA (CIL WO	RKSH	EET	OF	11-13-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/29/88 MPS-2142 NA		SA DATA: ASELINE [] NEW [X]]
SUBSYSTEM: MDAC ID: ITEM:	MPS 2142 LH2 PRESTART	CONDITIONING RE	PLENISH LINE	(FH17)
LEAD ANALYST:	W.J.MCNICOLL			
ASSESSMENT:				
CRITICAL FLIGH		NDANCY SCREENS	CIL ITEM	
HDW/FU	NC A	в с		
NASA [/ IOA [3 /3] []]	[] [[NA] [NA		*
COMPARE [N /N] [N]	[N] [N] []]
RECOMMENDATIONS:	(If differ	ent from NASA)		
[3 /3] [NA]	[AN] [AN]	[[] (ADD/DEI] LETE)
* CIL RETENTION	RATIONALE: (I	AD	EQUATE []]
REMARKS:				_

ASSESSME ASSESSME NASA FME	ENT I	D:	•	2143					NASA DATA: BASELINE [] NEW [X]				
SUBSYSTE MDAC ID:			MPS 2143 LH2		TART	CON	REPLENIS	H LIN	E (FH17)			
LEAD ANA	LYSI	!:	W.J.	MCNI	COLL								
ASSESSME	ENT:												
		'ICAL 'LIGH	ITY		REDU	NDAN	CY S	CREEN	5	CIL			
		W/FU			A		В		C				
NASA IOA	[3	/3]	[NA] NA]	[NA] NA]	[[NA] NA]	[] *		
COMPARE	[/]	[]	[]	E]	[]		
RECOMMEN	IDATI	ons:	(1	f di	ffer	ent :	from	NASA)				
_	[/]	ĺ]	[]	[] (•] ELETE)		
* CIL RI		NOI	RATIC	NALE	: (I	f ap	plica	·	ADEQUATE NADEQUATE]		
REMARKS:		A FM	EA/CI	L RE	VIEW	MEE!	ring	NOTE	5.				

ASSESSME ASSESSME NASA FME	NT]	ID:		-2151			NASA DATA: BASELINE [] NEW [X]						
SUBSYSTE MDAC ID: ITEM:			MPS 215 LH2		'ART	CONI	OITIO	NING	RETURN	LINE	(FH	18)	
LEAD ANA	LYSI	r:	W.J	MCNIC	OLL		# en e						
ASSESSME	NT:												
			ITY	R	EDUI	NDANO	ey scr	REENS	}	CI			
		FLIGH DW/FU		A			В		С	II	EM		
NASA IOA	[1	1 /1]	[N	A] A]	[NA] NA]]	NA] NA]	[х ј х ј	*	
COMPARE	[/	3	[]	Γ]	[]	ſ]		
RECOMMEN	DATI	ONS:	(1	f dif	fere	ent f	rom N	IASA)					
	נ	/]	[]	[]	ſ]	[(ADD/	DELI DELI	ETE)	
* CIL RE	TENT	NOI	RATIO	NALE:	(11	f app	licab	·	ADEQUAT ADEQUAT	-]		
	/NAS	A CI	L OF	12-23	-87	AND	RI/NA	SA C	IL WORK	SHEET	OF	11-13-	

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/29/88 MPS-2152 NA	NASA DATA: BASELINE [] NEW [X]						
SUBSYSTEM: MDAC ID: ITEM:	MPS 2152 LH2 PRESTART COND	OITIONING RETURN 1	LINE (FH18)					
LEAD ANALYST:	W.J.MCNICOLL							
ASSESSMENT:								
CRITICAL: FLIGH HDW/FU	T	B C	CIL ITEM					
NASA [/ IOA [3 /3] [] [] [] [] NA] [NA]	[] *					
COMPARE [N /N] [N][иј [иј	[]					
RECOMMENDATIONS:	(If different i	from NASA)						
[3 /3] [NA] [NA] [NA]	[] (ADD/DELETE)					
* CIL RETENTION	RATIONALE: (If app	plicable) ADEQUAT INADEQUAT						

ASSESSMI ASSESSMI NASA FMI	ENT 1	D:		-2153	3			NASA DATA: BASELINE [NEW [X					
SUBSYSTEMDAC ID:			MPS 215: LH2		TART	COND	OITIO	IING	RETUR	N LI	NE	(FH	L8)
LEAD ANA	ALYSI	:	W.J	. MCN	COLL								
ASSESSME	ENT:												
		ICAI LIGH	ITY T		REDUN	IDANC	Y SCI	REENS	;		CI	L EM	
	HI	W/FU	NC		A		В		С				
NASA IOA	[3	/3]	[NA] NA]	[NA] NA]	<u>[</u>	NA] NA]]]	*
COMPARE	[/]	Ţ	1	נ `]	[]		[]	
RECOMMEN	IDAT]	ONS:	(:	[f di	ffere	nt f	rom N	IASA)					
_	[/	J	[]	[1	C]	(A	[DD/	DELE	ETE
* CIL RE		'ION	RATI(ONALE	: (If	app	licab		ADEQU ADEQU		[]	
		A FM	EA/C	IL RE	VIEW	MEET	ING N	OTES	•				

ASSESSMEN ASSESSMEN NASA FMEA	T ID):	MPS-2	PS-2161 BASELINE [] 2	X]	
SUBSYSTEM MDAC ID: ITEM:	1:		MPS 2161 LH2 R								(V7)			
LEAD ANAI	LYST:		W.J.M	CNI	COLL									
ASSESSMEN	T:													
C		CAL IGH			REDUNI							CIL ITEM		
		/FUI			A		В			C		-		
NASA IOA	[2 [1	/1R /1]	[P] NA]]	F NA]	[P] NA]	[X X]	*
COMPARE	[N	/N	1	[N]	[N	1	[N]	[]	
RECOMMENI	DATIC	NS:	(If	di	ffere	nt f	ro	m NA	SA))				
-	[/]	[]	[]	[] (2	[ADD/	DE] LE	TE)
* CIL RET	rent i	ON 1	RATION	ALE	: (If	app	li	cabl	-	ADEQUATE]	
									AN'	r RELIEF I	- PATH		F	11-13-

ASSESSMENT DATE: 1/29/88 ASSESSMENT ID: MPS-2162 NASA FMEA #: 0411-2	NASA DATA: BASELINE [] NEW [X]
SUBSYSTEM: MPS MDAC ID: 2162 ITEM: LH2 RECIR	RCULATION MANIFOLD RELIEF VALVE (RV7)
LEAD ANALYST: W.J.MCNIC	COLL
ASSESSMENT:	
CRITICALITY F FLIGHT	REDUNDANCY SCREENS CIL ITEM
HDW/FUNC A	A B C
NASA [2 /1R] [F IOA [3 /3] [N	P] [F] [P] [X]* NA] [NA] [NA] []
COMPARE [N /N] [N	(и) (и) (и)
RECOMMENDATIONS: (If dif	fferent from NASA)
[3/3][N	NA] [NA] [D] (ADD/DELETE)
* CIL RETENTION RATIONALE:	
	ADEQUATE [] INADEQUATE []
REMARKS: RI/NASA CIL WORKSHEET OF 1 WHILE RI/NASA CIL OF 12-23 RATIONALE AVAILABLE.	11-13-87 INDICATES A 3/3 CRITICALITY 3-87 SHOWS 2/1R. NO SUPPORTTING

ASSESSMENT DAT ASSESSMENT ID: NASA FMEA #:		S-2163 BASELINE []							
SUBSYSTEM: MDAC ID: ITEM:	MPS 2163 LH2 REC								
LEAD ANALYST:	W.J.MCN	ICOLL							
ASSESSMENT:									
	ALITY GHT	REDUNDANC	CY SCREENS	3	CIL ITEM				
	FUNC	A	В	C ,					
NASA [1 / IOA [1 /	1] [1] [NA] [NA] [NA] [NA] [NA]	[X] * [X]				
COMPARE [/] [] [] []	[]				
RECOMMENDATION	s: (If d	ifferent f	from NASA)						
	1 [] [_] _[[] DD/DELETE)				
* CIL RETENTIO	N RATIONAL	E: (If app	•	ADEQUATE IADEQUATE	[]				
REMARKS: REF: RI/NASA 87.	CIL OF 12-	23-87 AND	RI/NASA (CIL WORKSHE	EET OF 11-13-				

ASSESSME ASSESSME NASA FME	NT ID:	1/29/88 MPS-216 NA		NASA DATA: BASELINE [] NEW [X]						
SUBSYSTE MDAC ID:	M:	MPS 2164 LH2 REC	CIRCULAT	OLD RELIEF V	ALVE (RV7)					
LEAD ANA	LYST:	W.J.MCN	NICOLL							
ASSESSME	NT:									
	CRITICAL FLIGH		REDUNDA	ANCY SCRE	ENS	CIL				
	HDW/FU		A	В	С	ITEM				
NASA IOA	[3 /3] [NA]	[] [NA]	[] [NA]	[] *				
COMPARE	[N /N] [N]	[N]	[N]	[]				
RECOMMEN	DATIONS:	(If d	lifferent	from NA	SA)					
-	[3 /3] [NA]	[NA]	[NA]	[] .DD/DELETE)				
	TENTION 1	RATIONAL	Æ: (If a	applicabl	e) ADEQUATE INADEQUATE	[]				
REMARKS:										

ASSESSMEN ASSESSMEN NASA FME	NT ID:	MPS-217			BASELINE [] NEW [X]							
SUBSYSTEMDAC ID:		MPS 2171 LH2 REC	CIRCULAT	TION PUMP	(PP1, PP2, P	P3)						
LEAD ANA	LYST:	W.J.MC	NICOLL									
ASSESSME	NT:											
	CRITICAL		REDUNI	DANCY SCR	EENS	CIL						
	FLIGH HDW/FU	NC	A	В	C ,							
NASA IOA	[3 /3]	[] [AN]	[NA]	[] [NA]	[_					
COMPARE	[N /N	1	[и]	[и]	[N]	[1					
RECOMMEN	DATIONS:	(If	differe	nt from N	ASA)-							
	[3 /3]	[NA]	[NA]	[NA]	[ADD/D] ELETE)					
		RATIONA	LE: (If	applicab	le) ADEQUATE INADEQUATE	[]					
REMARKS:												

ASSESSME ASSESSME NASA FME	NT ID:	1/29/88 MPS-217 NA		NASA DATA: BASELINE [] NEW [X]					
SUBSYSTE MDAC ID:		MPS 2172 LH2 REC	IRCULAT:	ION PUMP	(PP1, PP2, F	P3)			
LEAD ANA	LYST:	W.J.MCN	ICOLL				-		
ASSESSME	NT:								
	CRITICAL FLIGH		REDUNDA	ANCY SCRE	ENS	CIL			
	HDW/FU	_	A	В	С				
NASA IOA	[3 /3] [NA]	[] [NA]	[] [NA]	[] *]		
COMPARE	[и/и] [N]	[N]	[N]	[]		
RECOMMEN	DATIONS:	(If d	lifferen	t from NA	SA)				
	[3 /3) [NA]	[NA]	[NA]	DD/D] ELETE)		
* CIL RE	TENTION	RATIONAL	E: (If	applicabl	e) ADEQUATE INADEQUATE	[]		
REMARKS:						-	<u>.</u>		

ASSESSMENT DATE: 1/29/88 ASSESSMENT ID: MPS-2173 NASA FMEA #: 0404-1									BASE		[]
SUBSYST: MDAC ID ITEM:			MPS 2173 LH2		CULA	TION	I PUMP	PI	P1, PP	2, P	P3)	
LEAD AN	ALYST	:	W.J.	MCNIC	OLL							
ASSESSM	ENT:											
		ICAL LIGH		R	EDUN	DANC	Y SCR	EENS	5		CII	
	HD	W/FU	NC	A			В		C			
NASA IOA	[3 [3	/3 /3]	и] и]	A] A]]	NA] NA]	[[NA] NA]		[] **] .
COMPARE	[/]	[]	[]	[]		[]
RECOMME	NDATI	ons:	(1	f dif	fere	nt f	rom N	asa)				
	. [/]	ľ]	Ţ]	[]	(A	[D D /E] ELETE)
* CIL R	ETENT	ION	RATIO	NALE:	(If	app	licab		ADEQUA ADEQUA	ATE ATE	[]
REMARKS REF: R		A FM	EA/CI	L REV	IEW	MEET	ING N					

ASSESSME ASSESSME NASA FME		1/29/88 MPS-217 NA	NASA DATA: BASELINE [] NEW [X]					
SUBSYSTE MDAC ID:		MPS 2174 LH2 REC	IRCULAT	ION PUMP	(PP1, PP2,	PP3)		
LEAD ANA	LYST:	W.J.MCN	ICOLL					
ASSESSME	NT:							
	CRITICAL: FLIGH	r	REDUND	ANCY SCRE	ENS	CIL ITEM		
	HDW/FU	NC	A	В	С			
NASA IOA	[3 /3] [NA]	[NA]	[] [NA]	[] *		
COMPARE	[N /N] [иј	[N]	[и]	[]		
RECOMMEN	DATIONS:	(If d	ifferen	t from NA	SA)			
-	[3 /3] [NA]	[NA]	[NA]	[] ADD/DELETE)		
* CIL RE	TENTION 1	RATIONALI	E: (If	applicabl	e) ADEQUATE INADEQUATE	[]		

REMARKS:

ASSESSMEN ASSESSMEN NASA FME	NT ID:	1/29/88 MPS-217 NA			NASA DATA: BASELINE [] NEW [X]					
SUBSYSTEM MDAC ID:	1 :	MPS 2175 LH2 REC	IRCULAT	ION PUMP	(PP1, PP2,	PP3)				
LEAD ANA	LYST:	W.J.MCN	ICOLL							
ASSESSME	NT:									
•	CRITICAL FLIGH HDW/FU	T	REDUND	ANCY SCRE	ENS C	CIL				
NASA IOA	[/ / 3] [] NA]	[] [NA]	[] [NA]	[] *]			
COMPARE	[N /N] [N]	[N]	[N]	[]			
RECOMMEN	DATIONS:	(If d	lifferen	t from NA	SA)					
-	[3 /3] [NA]	[NA]	[NA]	[ADD/D] ELETE			
* CIL RE	TENTION	RATIONAI	E: (If	applicabl	.e) ADEQUATE INADEQUATE	-]			

	6		NASA DATA: BASELINE [] NEW [X]					
2176	2176							
LEAD ANALYST: W.J.MCNICOLL								
	REDUND	ANCY SCREI	ens	CIL				
	A	В	С	ITEM				
] [NA]	[] [NA]	[NA]	[] *				
] [N]	[N]	[N]	[]				
(If d	ifferen	t from NAS	SA)					
] [NA]	[NA]	[NA]	[] DD/DELETE)				
RATIONAL	E: (If a	applicable	adequate	[]				
	MPS 2176 LH2 REC W.J.MCN LITY IT INC [] [[] [] [] [] [] [] [] []	MPS-2176 NA MPS 2176 LH2 RECIRCULAT: W.J.MCNICOLL LITY REDUND: TONC A [MPS-2176 NA MPS 2176 LH2 RECIRCULATION PUMP W.J.MCNICOLL LITY REDUNDANCY SCREIN ONC A B [MPS-2176 NA MPS 2176 LH2 RECIRCULATION PUMP (PP1, PP2, P W.J.MCNICOLL LITY REDUNDANCY SCREENS LITY CNC A B C [

ASSESSM ASSESSM NASA FM	ENT :	ID:	MPS-	1/29/88 NASA DATA: MPS-2177 BASELINE (0404-2 NEW [X								
SUBSYST MDAC ID ITEM:			2177		CULATIO	N PUMP	(P)	P1, PP2	, PP	3)		
LEAD AN	ALYS:	r:	W.J.	MCNIC	DLL							
ASSESSM	ENT:											
CRITICALITY REDUNDANCY SCREENS FLIGHT									CIL ITEM	,		
				A		В		C = 1.7.		TIEM		
NASA IOĀ	[:	1 /1 1 /1]	[N2	A] [NA] NĀ]]	NA] NA]		x]] *	
COMPARE	C	/	1	[] []	[]		[]	
RECOMME	NDAT:	ions:	(I	f diff	ferent	from NA	SA))				
-	[/	1,	C	<u>j</u> [1	[]		[D/DE] LETE)	
* CIL R		rion :	RATIO	NALE:	(If ap	plicabl		ADEQUA:	PE:	[[]	
REMARKS REF: R 87.	-	SA CI	LOF	12-23-	-87 AND	RI/NAS					F 11-	·12-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/29/88 MPS-2181 0502-1	N	ASA DATA: BASELINE NEW	[x]
SUBSYSTEM: MDAC ID: ITEM:	MPS 2181 LH2 PRE-PRESS	CHECK VALVE (CV17)	
LEAD ANALYST:				
ASSESSMENT:				
CRITICAL FLIGH		IDANCY SCREENS		CIL ITEM
HDW/FU		В		1124
NASA [3 /3 IOA [3 /3] [NA]] [NA]	M] [AM] M] [AM]	A] A]	[] *
COMPARE [/] []	[] [1	[]
RECOMMENDATIONS:	(If differe	ent from NASA)		
[/] []	[] [] (AD	[] D/DELETE)
* CIL RETENTION REMARKS:	RATIONALE: (If	A	DEQUATE DEQUATE	[]
	EA/CIL REVIEW	MEETING NOTES.		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	1/29/88 MPS-2182 0502-2			NASA DATA: BASELINE [] NEW [X]				
SUBSYSTEM: MDAC ID: ITEM:	MPS 2182 LH2 PRE-PI	RESS CHE	CK VALV		V17)		tu v	
LEAD ANALYST:	W.J.MCNIC	OLL						
ASSESSMENT:						• •. •		
CRITICAL: FLIGHT	ITY RI	EDUNDANC	Y SCREE	ens		CIL		
HDW/FUI			В	C			•	
NASA [2 /1R IOA [2 /1R]] [F]	[F [F]	[X] *]	
COMPARE [/] [] []	[]	[]	
RECOMMENDATIONS:	(If dif:	ferent f	rom NAS	SA)				
] [] []	[] (AI	[[D\DC] ELETE)	
* CIL RETENTION	RATIONALE:	(If app	licable	AD	EQUATE EQUATE	[]	
REMARKS: REF: RI/NASA CI NOTES.	L OF 12-23	-87 AND	RI/NASA	FME	A/CIL RI	EVIE	MEETING	

ASSESSME ASSESSME NASA FME	NT ID:	1/29/8 MPS-21 0502-3	L83					NASA DA BASELI N		[x]	
SUBSYSTE MDAC ID: ITEM:		MPS 2183 LH2 PF	Œ-P	RESS	CHE	CK VA	LVE	(CV17)					
LEAD ANA	LYST:	W.J.MC	CNIC	OLL									
ASSESSME	NT:									·			
	CRITICA FLIG			EDUNI		Y SCR B	EENS	; c		CI	L	ī	
	•						_			_		_	_
NASA IOA	[1/1]]	[N	A] A]	[NA] NA]	[NA] NA]		[X]	*
COMPARE	[/	1	נ]	ι	1	[]		[]	
RECOMMEN	DATIONS	: (If	dif	feren	nt f	rom N	ASA)						
-	[/	1	[]	[1	[]	(AI	[)D/	DE	LE	ETE)
* CIL RE	TENTION	RATIONA	LE:	(If	app	licab		ADEQUAT IADEQUAT		-]	
REMARKS: REF: RI NOTES.	/NASA C	IL OF 12	2-23	-87 A	ND	RI/NA	SA I	MEA/CIL	RI	VI	EW	I M	EETING

ASSESSME ASSESSME NASA FME	NT I	D:		MPS-2191 BASELINE []							
SUBSYSTE MDAC ID: ITEM: (CV21,CV			MPS 2191 GH2 PF								
LEAD ANA	LYST	:	W.J.MC	.J.MCNICOLL							
ASSESSME	NT:										
	_	ICAL: LIGH' W/FUI	r	R A	EDUND	ancy B	SCREI	ens C		CIL	4
NASA IOA	[2 [2	/1R /1R]	[P]	[F]	[P]	[X]] *
COMPARE	[/]	[]	[]	[]	[]
RECOMMEN	DATI	ons:	(If	dif	feren	t fr	om NAS	5A)			
-	[/	1	[1	[]	[] (2	[ADD/DI] ELETE)
* CIL RE		ION 1	RATIONA	LE:	(If	appl:	icable	AI	DEQUATE DEQUATE	[]
REMARKS: REF: RI NOTES.		A CI	L OF 12	2-23	-87 A	ND R	I/NAS	A FMI	EA/CIL E	REVIEW	MEETING

ASSESSMI ASSESSMI NASA FMI	ENT I	D:	MPS-2	MPS-2192 BASELINE]		
	3											E		
LEAD ANALYST: W.J.MCNICOLL														
ASSESSMI	ENT:													
		REDUN	DANCY	scr	EENS			CIL						
		LIGH W/FU	NC		A	в с								
NASA IOA	[1	/1 /1]]	NA] NA]	[N	IA] IA]	[]	NA] NA]		[X] *		
COMPARE	[/]	[]	[]	[]		[1		
RECOMMEN	DATI(ons:	(If	di	ffere	nt fr	om N	ASA)						
-	[/]	[]	[]	[]	(Al	[] ELETE)	
* CIL RE	TENT:	ION I	RATION	ALE	: (If	appl	icab.	, i	ADEQUA ADEQUA		[]		
REMARKS: REF: RI NOTES.		A CI	L OF 1	2-2	3-87	AND F	I/NA	SA FI	MEA/CI	L RI	EVIE	W MEE	ring	

ASSESSMEN ASSESSMEN NASA FME	T II		•							NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEM MDAC ID: ITEM: (LV56,LV!			MPS 2201 GH2 PF								co	NT	ROL VALV			F LT	
LEAD ANA	LYST:	;	W.J.MC	N]	CC	OLL											
ASSESSME	NT:															. "	14.5
(CRITI FI	CAL LIGH			RI	EDUNDA	/N(CY	sc	REE				CI IT		[
	HDV	I/FUI	1C		A			В				С					
NASA IOA	[2 [2	/1R /1R]	[F P	.] .]]	P F]		[[F P]		X X]	*
COMPARE	[/	1	[N]	[N]		[N]	[]	
RECOMMEN	DATIC	ons:	(If	d:	if	ferent	t :	fro	m	NAS.	A)						
-	[/]	[]	[]		[] (A)	[DD/	DE] ELE	TE)
* CIL RE	TENT	ION I	RATIONA	ALI	Ε:	(If	apj	pl:	ica				EQUATE EQUATE	[]	
REMARKS: REF: RI NOTES.	/NASI	A CI	L OF 12	2-:	23	-87 A	MD	R	[/N	ASA	F	MI	EA/CIL R	EVI	EV	, k	EETING

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [] NEW [X]						
	MPS 2202 GH2 PRESSURIZATION	FLOW CONTROL VALVE	Ε.					
LEAD ANALYST:	LEAD ANALYST: W.J.MCNICOLL							
ASSESSMENT:								
CRITICAL FLIGH	ITY REDUNDANCY		CIL TEM					
HDW/FU	TNC A B	С						
NASA [2 /1F IOA [2 /1F	[F] [P] [P] [F] [F] [] [P]	[X] * [X]					
COMPARE [/] [N] [N	[и] []					
RECOMMENDATIONS:	(If different fro	m NASA)						
. [/] [] [] D/DELETE)					
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []								
REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.								

ASSESSMEN ASSESSMEN NASA FMEA	T ID:		MPS-2203 BASELINE								
SUBSYSTEM MDAC ID: ITEM: (LV56,LV5			SSURIZAT	VE							
LEAD ANAI	LYST:	W.J.MCN	ICOLL								
ASSESSMEN	YT:					**					
	CRITICAL FLIGH HDW/FU	T	REDUNDA A	NCY SCREE	ens C	CIL ITEM					
NASA IOA	[1 /1 [1 /1] [NA] NA]	[NA] [NA]	[NA] [NA]	[X] *					
COMPARE	,[/] [j_	[]	[]	[]					
RECOMMENI	DATIONS:	(If d	ifferent	from NAS	SA)						
	[/] [1	[]	[] (A)	[] DD/DELETE)					
* CIL RET		RATIONAL	Æ: (If a	applicable	ADEQUATE INADEQUATE	[]					
		L OF 12-	23-87 AN	ID RI/NASA	A FMEA/CIL R	EVIEW MEETING					

ASSESSMENT DAT ASSESSMENT ID: NASA FMEA #:				NASA DATA BASELINE NEW	-				
SUBSYSTEM: MDAC ID: ITEM:	2211	ESSURIZATI	ON DISCON	NECT (PD5)					
LEAD ANALYST: W.J.MCNICOLL									
ASSESSMENT:									
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM									
HDW/	UNC	A	В	С					
NASA [1 /: IOA [1 /:] [[NA] [[NA] [NA] [NA] [NA] NA]	[X] *				
COMPARE [/) (] [] []	[]				
RECOMMENDATION	: (If d	lifferent :	from NASA)					
) (] , [] [] (AI	[] DD/DELETE)				
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []									
REMARKS: REF: RI/NASA (NOTES.	IL OF 12-	-23-87 AND			EVIEW MEETING				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/01/88 MPS-2211A 0503-6	NASA I BASEI	DATA: LINE [] NEW [X]
MDAC ID:	MPS 2211 GH2 PRESSURIZ	ZATION DISCONNECT (1	PD5)
LEAD ANALYST:	W.J.MCNICOLL		·
ASSESSMENT:			
CRITICAL FLIGH HDW/FU	T	NDANCY SCREENS B C	CIL ITEM
NASA [3 /3 IOA [1 /1] [NA]] [NA]	[NA] [NA] [NA]	[
COMPARE [N /N] []	[] []	[N]
RECOMMENDATIONS:	(If differ	ent from NASA)	. .
[/] []	[] []	[] (ADD/DELETE)
* CIL RETENTION	RATIONALE: (I	f applicable) ADEQUA INADEQUA	
REMARKS: THE IOA CRITICAL REF: RI/NASA FM	LITY WAS DRIVE EA/CIL REVIEW	N BY THE FAILURE TO MEETING NOTES.	REMAIN OPEN.

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:				NASA DATA BASELINE NEW					
SUBSYSTEM: MPS MDAC ID: 2212 ITEM: GH2 PRESSURIZATION DISCONNECT (PD5)									
LEAD ANALYST: W.J.MCNICOLL									
ASSESSMENT:									
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM									
HDW/FU		A	В	С	11211				
NASA [3 /3 IOA [1 /1] [NA] [NA] [NA] [NA] [NA] NA]	[X] * [X]				
COMPARE [N /N] [] [] [1	[N]				
RECOMMENDATIONS:	(If d	ifferent f	rom NASA)					
[/] [] [] [] (A)	[DD/DELETE)				
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []									
REMARKS: REF: RI/NASA CI NOTES.	L OF 12-	23-87 AND			•				

ASSESSME ASSESSME NASA FME	ENT I	D:		2213				NASA D BASEL			
SUBSYSTE MDAC ID:			2213	PRESSU	RIZATI	ON DIS	CONN	ECT (P	D5)		·
LEAD ANA	LYSI	: :	W.J.	MCNICO	LL						
ASSESSME	ENT:										
CRITICALITY REDUNDANCY SCREENS CIL ITEM											
	_			A	-	В		c	T. 1	. em	
NASA IOA	[]	/1]	[NA [NA		NA] NA]	[NA] NA]	[X X) *]
COMPARE	[/	1	[] [3	[1	[1
RECOMMEN	IDAT]	ons:	(I	f diff	erent	from N	ASA)				
-	[/)	[] []	[]		DE!] LETE)
* CIL RI	ETENI	rion	RATIO	NALE:	(If ap	pļicab		ADEQUA ADEQUA	TE []
REMARKS: REF: RI NOTES.	: [/NAS	SA CI	L OF	12-23-	-87 AND	RI/NA	SA F	MEA/CI	L REV	EW	MEETING

ASSESSME ASSESSME NASA FME	NT I	D:		2213A		nasa da Baseli N				
SUBSYSTEM: MPS MDAC ID: 2213 ITEM: GH2 PRESSURIZATION DISCONNECT (PD5)										
LEAD ANA	LYST	:	W.J.	MCNICOLL						
ASSESSMENT:										
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM										
			NC	A	В	С	IIEM			
NASA IOA	[1	/1 /1]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[X] *			
COMPARE	[/]	[]	[]	[]	[]			
RECOMMEN	DATI	ons:	(I	f differ	ent from N	ASA)				
[/] [] [] (ADD/DELETE)										
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []										
REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.										

SUBSYSTEM: MPS MDAC ID: 2221 ITEM: LH2 TANK GROUND PRE-PRESS DISCONNECT (PD10) LEAD ANALYST: W.J.MCNICOLL ASSESSMENT: CRITICALITY REDUNDANCY SCREENS CIL FLIGHT HDW/FUNC A B C NASA [3 /3] [NA] [NA] [NA] [] * IOA [3 /3] [NA] [NA] [NA] [] *	SESSMENT DATE: SESSMENT ID: SA FMEA #:			NASA DATA: BASELINE NEW	[x]
ASSESSMENT: CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C	AC ID:	2221	ND PRE-PRESS	DISCONNECT	' (PD10)
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C	AD ANALYST:	W.J.MCNICOLL			
FLIGHT ITEM HDW/FUNC A B C	SESSMENT:			-	
NASA [3 /3] [NA] [NA] [NA] [] * IOA [3 /3] [NA] [NA] [NA] []	FLIGH.	IGHT			
	NASA [3 /3 IOA [3 /3	/3] [NA] /3] [NA]			[] *
COMPARE [/] [] [] []	MPARE [/	/] []	[] [1	[]
RECOMMENDATIONS: (If different from NASA)	COMMENDATIONS:	NS: (If differe	nt from NASA))	
[/] [] [] [] (ADD/DELETE		/] []	[] [[DD/DELETE)
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE [] REMARKS: PEF: BI/NASA EMEA/CIL DEVIEW MEETING NOTES	MARKS:		IN	IADEQUATE	[]

ASSESSME ASSESSME NASA FME	ENT	II):	MP	S-2	22										ASA DAT BASELIN NE		х]		
SUBSYSTE MDAC ID:				MP 22 LH	22	AN:	K (GRO	UNI	D :	PR	E-1	PRE	SS	D:	ISCONNE	СT	(P	D1	0)	
LEAD ANA	LYS	T:		W.	J.M	CN:	IC	OLI													
ASSESSME	NT:	}																			
		FL	CAL	C					ND	AN			CRE	EN:				IL TE			
	1.	IDW	/FUI	NC.			A				В				C						
NASA IOA	[2	/1R /1R]		[P P]		[F F]		[F F]	[X X]	*	
COMPARE	[/]		[]		[]		[]	[]		
RECOMMEN	DAT	'IO	NS:		(If	d:	Lfi	er	ent	: 1	fro	m	NA	SA)						
			/]		[]		[-]	ø.	[_] (2] ELI	ETE)
* CIL RE	TEN	TI	ON F	TAS	ION	\LI	: 2	(I	f a	ıpı	ol i	Lca	bl	e)							
REMARKS:														Iì	AI IAI	EQUATE EQUATE	[]		
REF: RI	/NA	SA.	CII	. OI	F 12	2-2	23-	-87	AN	ĪD	RI	/N	IAS	A I	ME	EA/CIL H	REV:	ΙE	W N	ÆE'	ring

ASSESSMEN ASSESSMEN NASA FMEA	T T	D:	MPS-22	222	2A							SA DATA: ASELINE NEW	[1	
SUBSYSTEM MDAC ID:			MPS 2222 LH2 T	ANI	ζ G	ROUND) I	PRE	-PRES			SCONNECT				
LEAD ANAI	LYST	! :	W.J.M	CN]	CC	LL										
ASSESSMEN	NT:											-				
Ó		'ICAL 'LIGH	ITY T		RE	DUNDA	N	CY	SCREE	NS		<u>.</u>		IL PEM		
	HD	W/FU	NC		A			В			С					
NASA IOA	[3 [2	/1R /1R]	[P P]	[F F]	[P F]	[X]	*
COMPARE	[N	1 /]	[]	[]	[N]	[]	
RECOMMEN	DATI	ons:	(If	đ	ifí	erent	: :	fro	om NAS	A))					
	[/]	[1	[]	[] (A)		/DI		ETE)
* CIL RE	TENT	NOI	RATION	ΑL	E:	(If a	p	pl:	icable		7.1	DEQUATE DEQUATE	[]	
REMARKS: THE RI/N ANALYSIS 0501-2 F REF: RI NOTES.	ASA FOI MEA	ANAL THE	YSIS A PRELA SHOULD	DD: UN B	RES CH E	SSES I PHASI COMBII	FA E VE	ON: D 1	LY IS WITH (IR No	INC OT	G LOADIN NECESSA -4.	G (RY	·	Y Ti	n.E.

ASSESSMENT DATE: 2/01/88 NASA DATA: ASSESSMENT ID: MPS-2222B BASELINE [] NASA FMEA #: 0501-4 NEW [X]										
SUBSYSTEM: MPS MDAC ID: 2222 ITEM: LH2 TANK GROUND PRE-PRESS DISCONNECT (PD10)										
LEAD ANALYST: W.J.MCNICOLL										
ASSESSMENT:										
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM										
HDW/FU		В С	LIEM							
NASA [2 /1R 10A [2 /1R	and the second s	F] [P] F] [F]	[X] *							
COMPARE [/] [] [] [N]	[]							
RECOMMENDATIONS:	(If different	from NASA)								
[/] [] [] (ADD/DELETE)										
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE []										
REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.										

ASSESSMENT DAT ASSESSMENT ID: NASA FMEA #:	MPS-223		NASA DATI BASELINI NEV] 3
SUBSYSTEM: MDAC ID: ITEM: (PD16)	MPS 2231 GH2 PRE	SSURIZATION MANI	FOLD TEST PO	OINT COUPLING
LEAD ANALYST:	W.J.MCN	IICOLL		
ASSESSMENT:				
FLI	SHT	REDUNDANCY SCRE		CIL ITEM
HDW/	FUNC	A B	С	
NASA [2 / IOA [1 /	1R] [1] [F] [F] [NA]	[F] [NA]	[X] * [X]
COMPARE [N /	и] [[и] [и]	[א]	[]
RECOMMENDATION	S: (If d	lifferent from NA	SA)	
[1/	ı] [[NA] [NA]		[] ADD/DELETE)
		E: (If applicabl	ADEQUATE INADEQUATE	
THE FAILURE MO EXTERNAL LEAKA SHOULD BE REVI	DE SPECIFI GE CAUSED SED OR DEI	IES LEAKAGE WHICH BY A SINGLE FAIL LETED. -23-87 AND RI/NAS	I IS PRESUME LURE. THIS	ANALYSIS

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-2231A	IPS-2231A BASELINE []								
SUBSYSTEM: MDAC ID: ITEM: (PD16)	MPS 2231 GH2 PRESSURIZA	ATION MANIFOLD TEST PO	INT COUPLING							
LEAD ANALYST:	W.J.MCNICOLL									
ASSESSMENT:										
CRITICAL FLIGH HDW/FU		DANCY SCREENS B C	CIL ITEM							
NASA [1 /1 IOA [1 /1] [NA]] [NA]	[NA] [NA] [NA]	[X] *							
COMPARE [/] []	[] []	[]							
RECOMMENDATIONS:	(If differen	nt from NASA)								
. [/	1 [1	[] [] (A)	[] DD/DELETE)							
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []										
REMARKS: REF: RI/NASA CI NOTES.	L OF 12-23-87 A	AND RI/NASA FMEA/CIL RI	EVIEW MEETING							

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-224			NASA DATA: BASELINE NEW	
	2241	PRESSUR		SCONNECT CHI	ECK VALVE
LEAD ANALYST:	W.J.MCN	ICOLL			
ASSESSMENT:					
FLIGHT	and the second s		ANCY SCREE	C C	CIL ITEM
NASA [/ IOA [2 /1R] [P]	[_F]	[] [F]	[x] *
COMPARE [N /N] [N]	[N]	[N]	[N]
RECOMMENDATIONS:	(If d	ifferen	t from NAS	SA)	
. [/] []	[]	[] (AI	[] DD/DELETE)
* CIL RETENTION I	RATIONALI	E: (If a	applicable	adequate	
REMARKS: THIS FAILURE IS (PD10, ON IOA WORLD					OM CV17 TO

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:				NASA DATA BASELINE NEW	: [x]
SUBSYSTEM: MDAC ID: ITEM: (TP21,TP22,TP23)	MPS 2251 GH2 PRE	SSURIZAT	CION DUAL	CHECK VALVE	TEST PORT
LEAD ANALYST:	W.J.MCN	ICOLL			
ASSESSMENT:					
CRITICAL FLIGH HDW/FU	T	REDUNDA A	NCY SCREE	ens C	CIL ITEM
nuw/ru	NC	A	Б	C	
NASA [/ IOA [1 /1] [NA]	[] [NA]	[] [NA]	[
COMPARE [N /N] [N]	[и]	[N]	[и]
RECOMMENDATIONS:	(If d	ifferent	from NAS	SA)	
. [/] [1	[]	[] (A)	[] DD/DELETE)
* CIL RETENTION	RATIONAL	E: (If a	applicable	ADEQUATE INADEQUATE	[]
REMARKS: THIS FAILURE IS 22, 23), ON IOA					ALVE (CV21

ASSESSME ASSESSME NASA FME	NT ID: A #:	MPS-2 0407-	2261			
SUBSYSTE MDAC ID:		MPS 2261 LH2 F	FEED DISC	CONNECT VAI	LVE (PD2)	· · · · · · · · · · · · · · · · · · ·
LEAD ANA	LYST:	W.J.N	MCNICOLL			
ASSESSME	INT:					en e
	CRITICA		REDU	DANCY SCRE	eens	CIL
	FLIG HDW/F		A	LIEM		
NASA IOA	[1 /1	.]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[X] * [X]
COMPARE	T /	1	[]	[]	[]	[]
RECOMMEN	IDATIONS	: (I1	f differe	ent from NA	ASA)	
-	[/]	[]	[]	[] (2	[] ADD/DELETE)
* CIL RE	TENTION	RATION	NALE: (If	f applicabl	le) ADEQUATE	r 1
	· · · · · ·			-	INADEQUATE	
REMARKS: REF: RI 87.		IL OF	12-23-87	AND RI/NAS	SA CIL WORKSH	IEET OF 12-15-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-226	BASELINE NEW] 1		
	MPS 2261 LH2 FEE	D DISCONN	(PD2)			
LEAD ANALYST:	W.J.MCN	ICOLL				
ASSESSMENT:						
CRITICALI FLIGHT		REDUNDAN	CY SCREENS	S	CIL	
HDW/FUI	NC	A	В	С		
NASA [3 /3 IOA [1 /1] [NA] [NA] [NA] [NA] [NA] NA]	[x] *
COMPARE [N /N] [] [] []	[N]
RECOMMENDATIONS:	(If d	ifferent	from NASA)		
] [] [] [] (AI	[ID/DC] ELETE)
* CIL RETENTION I	RATIONAL	E: (If ap	plicable)	100011100	_	
			II	ADEQUATE NADEQUATE	[]
REMARKS: THE CRITICALITY I TO REMAIN OPEN, I REF: RI/NASA FMI	NOT THE	FAILURE T	O OPEN.		THE	FAILURE

ASSESSM ASSESSM NASA FM	ENT	I			-2262					nasa i Basei	DATA: LINE NEW	[
SUBSYST MDAC ID ITEM:				MPS 226 LH2	2	DISC	ONNE	ECT VA	LVE	(PD2)				
LEAD AN	ALY	ST	:	W.J	.MCNI	COLL								
ASSESSM	ENT	:												
	CR		ICAI LIGI			REDUN	DANG	CY SCR	REENS	;		CIL	.	
				INC		A		В		C		IIEI	1	
NASA IOA	. [1	/1 /1]	[NA] NA]	[[NA] NA]	[NA] NA]		[X [X]	*
COMPARE	. [/]	[]	[1	[]		[]	
RECOMME	NDA	TI	ONS:	; (If di	ffere	ent i	from N	iasa)					
-	(/]]	[1	(]	(AI	[D/D		ETE)
* CIL R		NT	ION	RATI	ONALE	: (If	app	olicab		ADEQUA ADEQUA	ATE	[]	
REMARKS REF: R 87.		AS.	A C	L OF	12-2	3-87	AND	RI/NA	ASA C	CIL WOI	RKSHE	ET (F	12-15-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-2262A		NASA DATA: BASELINE NEW	[x]
MDAC ID:	MPS 2262 LH2 FEED DI	SCONNECT VALVE	(PD2)	
LEAD ANALYST:	W.J.MCNICOL	L		
ASSESSMENT:				
CRITICAL: FLIGH		OUNDANCY SCREENS		CIL ITEM
HDW/FU		В	С	
NASA [1 /1 IOA [1 /1] [NA]	[NA] [[NA] [NA] NA]	[X] * [X]
COMPARE [/] []	[] []	[]
RECOMMENDATIONS:	(If diffe	erent from NASA)		
[/] []	[] [[] DD/DELETE)
* CIL RETENTION	RATIONALE: (ADEQUATE ADEQUATE	[]
REMARKS: REF: RI/NASA CI: 87.	L OF 12-23-8	37 AND RI/NASA C		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-2263			NASA DATA: BASELINE NEW	
MDAC ID:	MPS 2263	DICCOVIN		(DD2)	est order electric
ITEM:	LH2 FEED	DISCONNE	CT VALVE	(PDZ)	
LEAD ANALYST:	W.J.MCNIC	OLL			
ASSESSMENT:					
	ITY R	EDUNDANC	CY SCREENS		CIL ITEM
FLIGH HDW/FU	NC A		В	C	
NASA [1 /1 IOA [1 /1] [N	A] [A] [NA] [NA] [NA] NA]	[X] * [X]
COMPARE [/] [] [] [J	[]
RECOMMENDATIONS:	(If dif	ferent f	rom NASA)	
[/ ,] [] [] [] (AI	[] DD/DELETE)
* CIL RETENTION	RATIONALE:	(If app		ADEQUATE ADEQUATE	[]
REMARKS: REF: RI/NASA CI: 87.	L OF 12-23	-87 AND	RI/NASA	CIL WORKSHE	EET OF 12-15-

ASSESSME ASSESSME NASA FME	NT ID	: ME						nasa d Basei				
SUBSYSTE MDAC ID:		ME 22 LH		DISC	ONNEC	T VA	LVE	(PD2)				
LEAD ANA	LYST:	W.	J.MCNIC	OLL								
ASSESSME	NT:											
	FL	CALITY IGHT /FUNC		EDUNI	DANCY E			c		CII		
NASA IOA	[1 /	/1] /1]	[N	'A] 'A]	[N	IA] IA]	[NA] NA]		[]	[] []	*
COMPARE	[/	/]	[]	[]	τ]		[]	
RECOMMEN	DATIO	NS:	(If dif	fere	nt fi	om N	'ASA)					
_	[,	/]	[]	[]	[]	(AD	[D/I) ELI	ETE)
* CIL RE	TENTI	ON RAI	CIONALE:	(If	app]	icab.		ADEQUA ADEQUA	TE TE]]	
REMARKS: REF: RI 87.	/nasa	CIL)F 12-23	-87 2	AND F	RI/NA	SA C	IL WOR	KSHE	ET	OF	12-15-

ASSESSMI ASSESSMI NASA FMI	ENT I			2271			[x] [x]					
SUBSYSTE MDAC ID:			MPS 2271 LH2	PREVALV	E (PV4	, PV5,		ent det				
LEAD ANA	ALYST	:	W.J.	MCNICOL	L							
ASSESSME	ENT:											
		ICAL LIGH	ITY T	RED	UNDANC	CY SCF	REENS			CIL ITEM	7	
		W/FU		A		В	C				•	
NASA IOA	[1 [1	/1 /1]	[NA] [NA]	[NA] NA]	[N	A] A]		x]] *	
COMPARE	C	/]	[]	Ţ]	[]		Ţ]	
RECOMMEN	NDATI	ons:	(I	f diffe	rent f	rom N	IASA)					
-	[/]	[]	[]	[]	(AD	[D/DE] LETE))
* CIL RE	ETENT	ION :	RATIO	NALE: (If app	olicab	À	DEQUA		[]	
REMARKS: REF: RI 87.		A CI	L OF	12-23-8	7 AND	RI/NA	SA CI	L WOR	KSHE	ET C	F 12-	-15-

ASSESSME ASSESSME NASA FME	NT NT A	Di II	ATE:	: 2 N	2/0 (P:	/01/88 PS-2271A 402-5											ASA DATA BASELINI NET	Ε]	
SUBSYSTE MDAC ID:				2		S 71 2 PI	RE7	VA.	LVE	(P	V.	4 , I	P V 5	, P	V 6)						
LEAD ANA	'TA	ST	:	V	V.:	J.M	CN I	C	OLL													
ASSESSME	NT	:																				
	CR		ICAI LIGI					R	EDU	NDA	N	CY	sc	RE	EN:	3				L CEN		
	1	_	W/F					A				В				С					•	
NASA IOA	[3 1	/1I /1	R :]]		[P N] A]		[F NA]		[P N2] A]		[[X X]	*
COMPARE	[N	/N]		[N]		[N]		[N]		[]	
RECOMMEN	IDA'	TI	ONS	:		(If	d:	if	fer	ent	: :	fro	m	NA	SA)						
-	[/	•]		[]		[]		[] (2] ELH	ETE)
* CIL RE	TE	NT	ION	R	ΑT	ION	AL	Е:	(1	fā	pJ	p1:	Lca	ıbl			DEQUATE DEQUATE		[[]	
REMARKS: THE IOA FAILURE SHOULD F REF: RI	CR TO	O RE	PEN SS	F(PRI	OR EL	LH: AUN	2 1 CH	DU! F.	MP AII	HAS URE		REI ALS	OUN	IDA	NC'	Υ,	THIS C	ΙL	. V	OI	RKS	SHEET

ASSESSM	ENT DATE: ENT ID: EA #:	MPS-2272			BASELINE NEW	
SUBSYST MDAC ID ITEM:	:	2272	ALVE (PV4	, PV5, PV6)		
LEAD AN	ALYST:	W.J.MCN	COLL			
ASSESSM	ENT:					·
			REDUNDANC	Y SCREENS	5	CIL
	FLIGH HDW/FU	NC	A	В	C	ITEM
NASA IOA	[2 /1R [3 /3] [P] [NA] [F] [NA] [P] NA]	[X] *
			N] [и]	[и]
RECOMME	NDATIONS:	(If d	ifferent f	rom NASA)		
-	[3 /3] [NA] [NA] [NA]	[D] DD/DELETE)
* CIL R	ETENTION :	RATIONALI	E: (If app		ADEQUATE IADEQUATE	[] · · · · · · · · · · · · · · · · · ·
TOLERAN REF: R	CING SUBS CE (NSTS I/NASA CI	22206, 2 L OF 12-2	.3.2d). F 23-87 AND	ASSUMED TO PAILURE HA RI/NASA O	BE OPERAT	TING WITHIN ET. ET OF 12-15-

ASSESSME ASSESSME NASA FME	NT ID:		73	NASA DATA BASELINE NEW] (]							
SUBSYSTE MDAC ID: ITEM:		MPS 2273 LH2 PR	REVAI	LVE (PV	4,PV5,	PV6)							
LEAD ANA	LYST:	W.J.MC	NICO	LL									
ASSESSME	NT:												
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C													
	HDW/FC	INC											
NASA IOA	[1 /1 [1 /1]	[NA		NA] NA]	[[NA] NA]	[3	() ()	*			
COMPARE	[/]	[] []	ſ]	נ]				
RECOMMEN	DATIONS:	(If	diff	erent	from N	ASA)							
-	[/]	[] []	[] (A	[DD/1) DELE	ETE)			
* CIL RE	TENTION	RATIONA	LE:	(If ap	plicab	•	ADEQUATE ADEQUATE	_]				
REMARKS: REF: RI	/NASA CI	L OF 12	-23-	-87 AND	RI/NA	SA C	IL WORKSH	EET	OF	12-15-			

ASSESSMEI ASSESSMEI NASA FME	NT I	D:	MPS-2	274	1							ASA DATA BASELINE NEW	[]	
SUBSYSTEM MDAC ID: ITEM:			MPS 2274 LH2 P	RE	VAI	LVE (I	PV	1 , I	PV5, PV	V6))	• •				
LEAD ANA	LYST	:	W.J.M	CN:	CC	OLL										
ASSESSME	NT:															
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM																
			NC		A			В			С	.1 52 0 3 030000000			•	
NASA IOA	[2 [1	/1R /1]	[P NA]	[F NA]	[P N2	A]	[X X]	*
COMPARE	[N	/N]	[N]	[N	1	[N]	[]	
RECOMMEN	DATI	ons:	(If	d:	ifí	ferent	: 1	fro	om NAS	SA))					
	[/]	[]	[]	[] (A)] ,dd	/DE] ELE	ETE)
* CIL RE	TENT	ION 1	RATION	AL	E:	(If a	p	91 i	cable		IA IAV	DEQUATE DEQUATE	[]	
REMARKS: THE PREV REF: RI 87.	ALVE /NAS	HAS A CI	TWO R L OF 1	EL 2-	IEI 23-	F PATH -87 AN	IS ID	R	(/NAS		F1-					12-15-

ASSESSMI NASA FMI	ENT I	D:	MPS-2	275	NASA DATA: BASELINE [] NEW [X]								
SUBSYSTI MDAC ID: ITEM:			MPS 2275 LH2 P	REV	ALVE	(PV4	, PV5,	PV6))				
LEAD AND	ALYSI	?:	W.J.M	CNI	COLL								
ASSESSMI	ENT:												
		'ICAL 'LIGH	ITY	3	REDUN	DANC	Y SCR	EENS	5		CII		
		W/FU		2	A		В		С		ITE	.M	
NASA IOA	[3	3 /3]	[]	NA] NA]]	NA] NA]]	NA] NA]		[] *	!
COMPARE	[/]	[]	[]	[]		[]	
RECOMMEN	ITADI	ons:	(If	di	ffere	nt f	rom N	ASA)					
-	[/]	[]	[)	[]	(A)	[DD/E] ELET	E)
* CIL RE	:							IN	ADEQUA IADEQUA		[]	
REF: R	L/NAS	A FM	EA/CIL	REV	/IEW	MEET	ING N	OTES	5.				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/01/88 MPS-2281 NA	NASA DATA: BASELINE NEW							
SUBSYSTEM: MDAC ID: ITEM: (TP11,TP12)	MPS 2281 LH2 17 INCH ORB	281 H2 17 INCH ORBITER DISCONNECT TEST							
LEAD ANALYST:	W.J.MCNICOLL								
ASSESSMENT:									
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C									
NASA [/ IOA [1 /1] []] [NA]	[NA] [NA]	[x] *						
COMPARE [N /N] [N]	[N] [N]	[и]						
RECOMMENDATIONS:	(If different	from NASA)							
. [/] []	[] [] (A)	[DD/DELETE)						
* CIL RETENTION	RATIONALE: (If a	pplicable) ADEQUATE INADEQUATE							
REMARKS: THIS FAILURE IS (RI/NASA 0407-4,	COVERED UNDER EX 0407-11 AND IOA	TERNAL LEAKAGE OF THE 2263).	E DISCONNECT						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-2291	1	BASELINE [] NEW [X]							
MDAC ID:	MPS 2291 LH2 FEEL	OLINE MAN	FOLD (MA	2)						
LEAD ANALYST:	W.J.MCN	ICOLL								
ASSESSMENT:										
CRITICAL: FLIGH		REDUNDANG	CY SCREENS	5	CIL ITEM					
HDW/FU	NC	A	В	С						
NASA [1 /1 IOA [1 /1] [NA] [NA] [NA] [NA] [NA] NA]	[X] *					
COMPARE [/) [] [] []	[]					
RECOMMENDATIONS:	(If d	ifferent :	from NASA)						
) [] [] [] (Al	[] DD/DELETE)					
* CIL RETENTION	RATIONALI	E: (If app		a DEOITAME	r 1					
			II	ADEQUATE NADEQUATE						
REMARKS: REF: RI/NASA CI 87.	L OF 12-2	23-87 AND	RI/NASA (CIL WORKSHI	EET OF 12-14-					

ASSESSMEN NASA FMEA	T ID:	2/01/88 MPS-2292 NA	2	NASA DATA: BĀSĒLINE [] NEW [X]							
SUBSYSTEM MDAC ID: ITEM:		MPS 2292 LH2 FEEI	OLINE MAN	IFOLD (MA	2)						
LEAD ANAI	YST:	W.J.MCN	COLL								
ASSESSMEN	IT:					www.company					
c	RITICALI FLIGHT		REDUNDAN	CY SCREEN	s	CIL ITEM					
	HDW/FUN		A	В	C	IIEM					
NASA IOA	[1/1] [] [NA] [NA] [NA]	[x] *					
COMPARE	[N /N] [и] [и ј [N]	[N]					
RECOMMEND	ATIONS:	(If di	fferent	from NASA)						
	[3 /3] [NA] [NA] [NA]	[DD/DELETE)					
* CIL RET	ENTION F	RATIONALE	: (If ap		ADEQUATE NADEQUATE	[]					
		ENT TANK	FILL OR	ENGINE S	TART. NO I	OSS OF CREW					

ASSESSME ASSESSME NASA FME	NT]	D:	•	-2293	BASELINE []								
SUBSYSTE MDAC ID:			MPS 2293 LH2	B FEEDL	INE	MANI	FOLD	(MA2)				
LEAD ANA	LYST	г:	W.J	MCNIC	OLL								
ASSESSME	NT:												
		FICAL FLIGH		R	EDUN	IDANC'	Y SCR	EENS		CI			
	HI	OW/FU	NC	A	•]	В						
NASA IOA	[:	3 /3]	[N [N	A] A]	[]	NA] NA]]	NA] NA]	[] *]		
COMPARE	[/]	[]	[]	[]	Γ]		
RECOMMEN	DAT:	ions:	(:	f dif	fere	nt f	rom N	ASA)					
-	[/]	ζ]	[]	[]	[(ADD/] DELETE)		
* CIL RE	TEN!	rion	RATIO	ONALE:	(If	app	licab	•	ADEQUATE		j		
REMARKS:		SA FM	FA/C	FT. PRV	WAT'	меет	TNG N		ADEQUATE] 3	J		

ASSESSME ASSESSME NASA FME	NT I	D:	MPS-	PS-2301 BASELINE []							
SUBSYSTE MDAC ID: ITEM:			MPS 2301 LH2		FEEDLINE (FH7)					
LEAD ANA	LYSI	!:	W.J.	MCNICOLI	1						
ASSESSMENT:											
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM											
		W/FU		A	B	c					
NASA IOA	[1 [1	/1]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[X] * [X]				
COMPARE	•	/]	[]	[]	[]	[]				
RECOMMEN	DATI	ons:	(I	f differ	ent from N	ASA)					
-	(/	j	[]	[]	[]	[] (ADD/DELETE)				
	* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []										
REMARKS: REF: RI 87.	EF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 12-14-										

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	2/01/88 MPS-2302 NA								
MDAC ID:	MPS 2302 LH2 17 INCH FI	EEDLINE (FH	77)						
LEAD ANALYST:	W.J.MCNICOLL								
ASSESSMENT:									
CRITICA: FLIG		DANCY SCREE	ins	CIL ITEM					
HDW/F		В	С	IIIM					
NASA [/ IOA [1 /1] []] [NA]	[] [NA]	[] [AA]	[x] *					
COMPARE [N /N] [N]	[N]	[и]	[N]					
RECOMMENDATIONS	: (If differe	nt from NAS	A)						
[3 /3] [NA]	[NA]		[DD/DELETE					
* CIL RETENTION	RATIONALE: (If	applicable							
			ADEQUATE INADEQUATE						
REMARKS: FAILURE WILL PRI ENGINE START.				NING OR					

ASSESSME ASSESSME NASA FME	ENT	I	D:		230	3				NASA DATA: BASELINE [] NEW [X]						
SUBSYSTEMDAC ID:				MPS 230 LH2	303 H2 17 INCH FEEDLINE (FH7)											
LEAD ANA	LYS	T	:	W.J	.MCN	ICOLI	j.									
ASSESSME	ENT:	}														
		F	LIGH				INDAN	CY SC	REENS			CI	L EM	1		
	H	IDV	/FU	NC		A		В		C						
NASA IOA	[3	/3 /3]]	NA] NA]]	NA]]	NA] NA]		[X X]	*	
COMPARE	[/]	[]	[]	[]		[]		
RECOMMEN	IADI	ïI	ons:	(If d	iffer	ent	from :	NASA)							
-	[/	.1	[]	[]	[]	(A	•	'DE	-	ETE)	
* CIL RE		T)	CON	RATI	ONAL	E: (I	f ap	plica		ADEQU IADEQU]		
REMARKS:		S	A FM	EA/C	IL R	EVIEW	MEE	TING :	NOTES	5.						

ASSESSME	SSESSMENT DATE: 2/01/88 NASA DATA SSESSMENT ID: MPS-2311 BASELINE ASA FMEA #: 0417-2 NEV]	
SUBSYSTE MDAC ID: ITEM:			MPS 231: LH2	1 12 INC							
LEAD ANA	LYST	':	W.J	.MCNICO	OLL						
ASSESSME	:TT										
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM											
	HD	W/FU	NC A B C								
NASA IOA	[1	/1]	[N2 [N2	A] [NA] NA]	[NA [NA]	[X [X] *	
COMPARE	[/]	[) (]	[]	[]	
RECOMMEN	DATI	ons:	(:	If diff	ferent	from N	ASA)				
-	[/]	[] [1	(] ELETE)	
* CIL RE		NOI	RATIO	ONALE:	(If ap	plicab	AD	EQUATE EQUATE]	
REMARKS: REF: RI		A CI	L OF	12-23-	-87 AND	RI/NA	SA CIL	WORKSH	EET	OF 12-1	L4-

ASSESSME ASSESSME NASA FME	CNT	I		MPS-	1/88 -2312	NASA DATA: BASELINE [] NEW [X]							
SUBSYSTE MDAC ID:				MPS 2312 LH2		EEDLINE (1	FH8, FH9, FH10)					
LEAD ANA	LY	ST	:	W.J	.MCNICOLL								
ASSESSME	ENT	:											
	CR				REDUN	DANCY SCRI	EENS	CIL					
	1		LIGH W/FU	NC NC	A	В	c	ITEM					
NASA IOA	[1	/1]	[] [NA]	[] [NA]	[NA]	[x] *					
COMPARE	[N	/N]	[N]	[N]	[N]	[N]					
RECOMMEN	IDA'	ri(ons:	(3	If differe	nt from NA	ASA)						
	[3	/3]	[NA]	[NA]	[NA]	[] ADD/DELETE)					
* CIL RE	ETE	NT:	ІОИ	RATIO	ONALE: (If	applicabl	le)						
		:	1 11 1				ADEQUATE INADEQUATE						
REMARKS: FAILURE		LL	PRE	VENT	TEMPERATU	RE CONDIT	ONING AND E	NGINE START.					
NO LOSS	OF	C	REW	OR VI	EHICLE.		artina de la deservación de la defensación de la						

ASSESSME ASSESSME NASA FME	NT ID:	2/01/ MPS-2 0417-	313	NASA DATA: BASELINE [] NEW [X]								
SUBSYSTE MDAC ID:		MPS 2313 LH2 1	2 INCH	FEEDLI	NE (1	FH8,1	FH9,FH10)					
LEAD ANA	LYST:	W.J.M	CNICOL									
ASSESSME	NT:											
	CRITICAL FLIGH	T						CII				
	HDW/FU	NC	A	E	5	(3					
NASA IOA	[3 /3]	[NA] [NA]	N]	A] A]	[]	IA] IA]	[] *]			
COMPARE	[/	1	[]	[]	[1	[]			
RECOMMEN	DATIONS:	(If	diffe	rent fr	om N	ASA)						
	[/]	[]	[]	[] (2	[ZDD/I] DELETE			
* CIL RE	TENTION	RATION	ALE: (If appl	icab	1	ADEQUATE ADEQUATE	[]			
	/NASA FM	EA/CIL	REVIE	W MEETI	NG NO	OTES.	•					

ASSESSMENT DATE: 2/01/88 ASSESSMENT ID: MPS-2321 NASA FMEA #: 0437-1							NASA DATA; BASELINE [] NEW [X]							
SUBSYST			MPS 2321 LH2	FEED:	LINE	REL	ŒF	SHUT		F VALV	E (I	8Ve)	
LEAD AN	ALYST	:	W.J.1	ICNI	COLL									
ASSESSMENT:														
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM														
			NC	;	A		В			C				
NASA IOA	[1 [1	/1 /1]	[]	NA] NA]]	NA] NA]]	NA] NA]		[]	X] X]	*
COMPARE	[/	1	[]	[]		[]		[]	
RECOMME	NDATI	ONS:	(I :	f di	ffere	nt i	from	NAS	A)					
	[/]	, [j	[]		[1.	(AĽ	[DD/1	DELI	ETE)
* CIL R	ETENT	ION :	RATIO	VALE	: (If	app	olic	able		ADEQUA ADEQUA	TE	[]	 :
REMARKS REF: R 87.	-	A CÍ	L OF	L2-2	3-87	AND	RI/	NĀSĀ		IL WOR			OF	8-20-

ASSESSM	ASSESSMENT DATE: 2/01/8 ASSESSMENT ID: MPS-23 NASA FMEA #: 0437-2									NASA D BASEI		[]	
SUBSYST				MP: 23: LH:	22	LINE	REL	IEF SH	IUTOI	FF VALV	E (I	vv8)		
LEAD AN	ALY	ST	:	W.3	J.MCNI	COLL								
ASSESSM	ASSESSMENT:													
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM														
				INC	2	A		В		С		TTE	M	
NASA IOA	[3 1	/3 /1]	1]	NA] NA]	[NA] NA]	[NA] NA]		[[x]	*
COMPARE	[N	/N]	[]	[]	[]		[N]	
RECOMMEN	IDA	TI	ons:	((If di	fere	ent 1	from N	(ASA					
-	[/]	[]	[1	[1	(AD	[D/D] ELE	TE)
* CIL RI	* CIL RETENTION RATIONALE: (If applicable)													
	ADEQUATE [] INADEQUATE []													
REMARKS: IOA CRIT LOSS OF REF: RI	IC. CR	EW	OR	VEH]	DRIVEN CLE FO	R FA	LUF	E TO	CLOS	E.	IN C	LOS	ED.	NO

NASA DATA:

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-232	2 A		NASA DATA: BASELINE NEW		
SUBSYSTEM:	MPS 2322	DLINE RELI	(EF SHUTO)	FF VALVE (I	2V8)	
LEAD ANALYST:	W.J.MCN	ICOLL				
ASSESSMENT:						ara erre er
CRITICAL		REDUNDANG	CY SCREENS	S	CIL ITEM	
FLIGH HDW/FU	nc Nc	A	В	С	TIEM	
NASA [2 /1F IOA [1 /1] [P] [NA] [F] [NA] [P] NA]	[X]	*
COMPARE [N /N] [и] [иј[и]	[]	
RECOMMENDATIONS:	(If d	ifferent :	from NASA)		
] [] [] [] (A)	[]	TE)
* CIL RETENTION	RATIONAL	E: (If app		ADEQUATE NADEQUATE		
REMARKS: RELIEF VALVE WII FAILURES ARE REC REF: RI/NASA CI	UIRED TO	CAUSE LOS	SS OF CRE	W OR VEHIC	LE.	
87.	01 12-	20 0, IMID			_	

ASSESSME ASSESSME NASA FME	NT I	D:		323		NASA DATA: BASELINE [] NEW [X]							
SUBSYSTE MDAC ID:			MPS 2323 LH2 F	EEDI	LINE	RELI	EF SH	IUTOF	F VALV	Œ (1	PV8)		
LEAD ANA	LYST	:	W.J.M	CNIC	COLL								
ASSESSME	NT:												
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM													
	_		NC	7	_		В		С				
NASA IOA	[1	/1 /1]	[]	IA] IA]]	NA] NA]	[[NA] NA]		K]	[] []	*
COMPARE	[/]	[]	[]	[]		[]	
RECOMMEN	DATI	ons:	(If	dif	fere	nt f	from N	IASA)					
	[/]	[1	C]	[]	(AI	[DD/I] ELE	ETE)
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE []													
								IN	ADEQUA IADEQUA]	
REMARKS: REF: RI 87.	/NAS	A CI	L OF 1	2-23	8-87	AND	RI/NA	SA C	CIL WOR	KSHI	EET	OF	8-20-

ASSESSME ASSESSME NASA FME	ENT	I			./88 -2331							A DATA SELINI NEV]
SUBSYSTE MDAC ID:				MPS 2331 LH2		LINE	REL	IEI	, LI	NE 1	TEST	PORT	(TP2	5)
LEAD ANA	LY	ST	:	W.J.	MCNI	COLL								
ASSESSME	ENT	:												
	CR			ITY		REDUI	NDAN	CY	SCR	REENS	5		CIL	
	1		LIGH W/FU	NC		A		В			C		1151	.
NASA IOA	[3	/ /3]	[NA]	[N2]	[[NA]		[[]*
COMPARE	[N	/N	1	[n j	. [N	3	[N]		[]
RECOMMEN	IDA'	TIC	ONS:	(1	f di	ffer	ent	fro	om N	IASA)	•			
-	[/]	[]	[]	[]	(2	[ADD/DI] ELETE)
* CIL RE	ETE	NT:	ION	RATIO	NALE	: (I	f ap	pli	icab	ole)				_
										I		QUATE QUATE	•]
REMARKS:		RE	IS	COVER	ED U	NDER	LEA	KAC	E C	F TH	ie r	ELIEF	LINE	ON IOA
WORKSHE	T.	34	NA C	D RI/	'NASA	CIL	WOR	KSI	IEET	042	23-1	•		

ASSESSME ASSESSME NASA FME	NT ID:		341		NASA DAT BASELIN NE	
SUBSYSTE MDAC ID: ITEM:		MPS 2341 LH2 FE	EDLINE M	ANIFOLD	RELIEF VALVE	(RV6)
LEAD ANA	LYST:	W.J.MC	CNICOLL			
ASSESSME	NT:					
	CRITICAI FLIGH HDW/FU	IT	REDUND A	ANCY SCR	EENS C	CIL ITEM
NASA	[1 /1		[NA]	[NA]	[NA]	[X] *
IOA	[1 /1	j	[NA]	[NA] [NA]	[NA]	[X] * [X]
COMPARE	[/	1	[]	[]	[]	[]
RECOMMEN	DATIONS:	(If	differen	t from N	ASA)	
-	[/	1	[]	[]		[] ADD/DELETE)
* CIL RE	TENTION	RATIONA	ALE: (If	applicab	le) ADEQUATE INADEQUATE	
REMARKS: REF: RI 87.	/NASA CI	L OF 12	2-23-87 A	ND RI/NA	SA CIL WORKS	HEET OF 10-5-

ASSESSME ASSESSME NASA FME	ENT :	ID:	MPS-	2342	BASELINE []						
SUBSYSTE MDAC ID:			MPS 2342 LH2	FEEI	OLINE	MANI	FOLD	RELIEF	VALVE (R	V6)	
LEAD ANA	LYS'	r:	W.J.	MCN]	COLL						
ASSESSME	ENT:										
		TICAI FLIGH			REDU	NDANC	Y SC	REENS		IL TEM	
	-		INC .		A		B	С		. WII	
NASA IOA	[:	2 /1F 3 /3]	[P] NA]	[[F] NA]	[P] [NA]	; · [x] *	
COMPARE	[]	и /и	1	[иј	[и]	[N]	Ţ.	и]	
RECOMMEN	IDAT:	ions:	(1	f di	ffer	ent f	rom	NASA)			
-	[/]	[]	[]	[]	[(ADD)] /DELETE)
* CIL RE	ETEN'	TION	RATIC	NALI	E: (I:	f app	lica	•	QUATE []	
REMARKS: FAILURE ALLOW LE REF: RI 87.	OF CAKA	BOTH GE OI SA CI	THE R LH2 L OF	RESU 12-2	EF VA JLTIN 23-87	LVE A G IN AND	ND T POSS RI/N	HE ISOLA IBLE LOS ASA CIL	TION VAL S OF CRE WORKSHEE	VE WILL W/VEHIC F OF 10	LE. -5-

ASSESSMI ASSESSMI NASA FMI	ENT	ID:	MPS-	2342	A				NASA I BASE	LINE]	
SUBSYSTE MDAC ID:			MPS 2342 LH2	FEED	LINE	MANII	FOLD	RELI	[EF VA]	LVE	(RV6	5)	. <u>.</u>
LEAD ANA	LYS'	r:	W.J.	MCNI	COLL								
ASSESSME	ENT:												
		PICAL FLIGH	ITY	:	REDUN	IDANC	SCF	REENS	3		CIL		
			NC	•	A	F	3		С		ITE	M	
NASA IOA	[:	3 /3]	[]	NA] NA]	[N	IA] IA]	[NA] NA]		[X]	*
COMPARE	[/]	[]	ĺ]	[]		[]	
RECOMMEN	DAT:	cons:	(I	f di	ffere	nt fr	om N	IASA)					
-	[/]	[]	ſ]	[]	(Al	[DD/D] ELE	TE)
* CIL RE	TENT	NOIT	RATIO	NALE	: (If	appl	icab	le)	ADEQUA	am.		,	
200								IN	ADEQUA		[]	
REMARKS: THE RI/N IOA CONC REF: RI	ASA URS.	,											
87.	,		_	. .	, ,,	mu n	-/ NA	JA C	TT WOL	Incon	iri '	JF	0-20

ASSESSME	NT	DA	TE:	2/0	02/8	8					NASA I				
ASSESSME NASA FME	MPS	5-23	43	;				BASEI	NEW] [X	[
SUBSYSTEMDAC ID:				MP: 234 LH:	43	ΕI	LINE 1	MAN	FOLD	REL	EF VA	LVE ((RV6	5)	
LEAD ANA	LYS	T:	:	W.S	J.MC	N]	COLL								
ASSESSME	NT:												- * : ===	<u>.</u>	1252.5
	CRI		CAL LIGH				REDUN	DANG	CY SCI	REENS	5		CII		
	H	_					A		В		C				
NASA IOA	[1	/1 /3]		[NA] NA]	[NA] NA]	[NA] NA]		[]	C :] *]· ·
COMPARE]			3	[]	[]		[]	ı j]
RECOMMEN	DA I	CI(ons:		(If	d:	iffere	nt :	from :	NASA))				
_	[/]		[1	[1	[]	(A)	[DD/I] LETE)
* CIL RE	TEN	T.	ION	RAT	IONA	L	E: (If	ap	plica	ble)	a DEOU	A TO TE	r		1
										I	ADEQU.	ATE	[1
87.	TI /NZ	AS	A CI	IL O	F 12	2-:	WILL I 23-87	AND	UPON RI/N	FIR ASA	ST FAI CIL WO	LURE RKSH	Eet	0	F 8-20-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-2343	BA	NASA DATA: BASELINE [] NEW [X]							
MDAC ID:	MPS 2343 LH2 FEED	OLINE MAN	IFOLD RE	LIEF VALVE	(RV6)					
LEAD ANALYST:	W.J.MCNI	COLL								
ASSESSMENT:										
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM										
HDW/FU	_	A	В	С	IICM					
NASA [1 /1 IOA [3 /3] [NA] [NA] [NA] NA]	[NA] [NA]	* [X] *					
COMPARE [N /N] [] []	[]	[N]					
RECOMMENDATIONS:	(If di	fferent :	from NAS	A)						
] [) []	[] (A)	[] DD/DELETE)					
* CIL RETENTION	RATIONALE	: (If ap	•	ADEQUATE	[]					
REMARKS:				INADEQUATE						
THIS RI/NASA ANA REF: RI/NASA CI 87.										

ASSESSME ASSESSME NASA FME	ENT	I	D:	MPS-	2353	L				NASA DASEL		[]	
SUBSYSTE MDAC ID: ITEM:				MPS 2351 LH2		P PRES	SUR:	IZATIO	ON O	RIFICE	(RP1	.0)		
LEAD ANA	LY	ST	:	W.J.	MCN]	COLL								
ASSESSME	ENT	:												
	CR		ICAL:			REDUN	DAN	CY SCR	REEN	S		CIL		
	1		LIGH W/FUI			A		В		С		ITE	M	
NASA IOA	[2	/1R /3]	[[P] NA]	[F] NA]]	P] NA]		[X] *	
COMPARE	[N	/N]	[n]	[и]	[N]		[N]	
RECOMMEN	IDA!	ric	ONS:	(I	f di	ffere	nt i	from N	IASA ()				
•••••	[3	/3	J	[NA]	[NAJ		NA]	(AD	[D/D] ELETE))
* CIL RE	TE	NT:	ION I	RATIO	NALE	: (If	app	plicab	•	ADEQUAT	CE CE	[]	
REMARKS: RELIEF S REF: RI NOTES.	YS!						-		OR	IFICE.				ring

SUBSYSTEM: MPS MDAC ID: 2352 ITEM: LH2 DUMP PRESSURIZATION ORIFICE (RP10) LEAD ANALYST: W.J.MCNICOLL ASSESSMENT: CRITICALITY REDUNDANCY SCREENS CIL ITEM HOW/FUNC A B C NASA [1 /1] [NA] [NA] [NA] [X] * IOA [1 /1] [NA] [NA] [NA] [X] * COMPARE [/] [] [] [] [] [] (ADD/DELETE) * CIL RETENTION RATIONALE: (If applicable) * CIL RETENTION RATIONALE: (If applicable) REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.	ASSESSMENT DA ASSESSMENT ID NASA FMEA #:	• •			NASA DATA BASELINE NEW	
ASSESSMENT: CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C NASA [1 /1] [NA] [NA] [NA] [X] * IOA [1 /1] [NA] [NA] [NA] [X] COMPARE [/] [] [] [] [] RECOMMENDATIONS: (If different from NASA) [/] [] [] [] [] [] * CIL RETENTION RATIONALE: (If applicable) * CIL RETENTION RATIONALE: (If applicable) REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING	MDAC ID:	2352	MP PRESSU	RIZATION	ORIFICE (RE	?10)
CRITICALITY REDUNDANCY SCREENS CIL ITEM HDW/FUNC A B C NASA [1 /1] [NA] [NA] [NA] [X] * IOA [1 /1] [NA] [NA] [NA] [X] * COMPARE [/] [] [] [] [] [] [] RECOMMENDATIONS: (If different from NASA) [/] [] [] [] [] [] [] * CIL RETENTION RATIONALE: (If applicable) * CIL RETENTION RATIONALE: (If applicable) REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING	LEAD ANALYST:	W.J.MC	NICOLL			
FLIGHT	ASSESSMENT:					
NASA [1 /1] [NA] [NA] [NA] [X] * IOA [1 /1] [NA] [NA] [NA] [X] COMPARE [/] [] [] [] [] RECOMMENDATIONS: (If different from NASA) [/] [] [] [] [] [] (ADD/DELETE) * CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE [] REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING			REDUNDA	NCY SCRE	ENS	· · · · · · · · · · · · · · · · · · ·
COMPARE [/] [] [] [] [] RECOMMENDATIONS: (If different from NASA) [/] [] [] [] [] (ADD/DELETE) * CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE [] REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING		•				
RECOMMENDATIONS: (If different from NASA) [/] [] [] [] [] (ADD/DELETE) * CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE [] REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING	NASA [1 IOA [1	/1] /1]	[NA] [NA]	[AN] [AN]	[NA] [NA]	(X) *
[/] [] [] [] (ADD/DELETE) * CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE [] REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING	COMPARE [/]	[]	[]	[]	[]
(ADD/DELETE) * CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE [] REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING	RECOMMENDATIO	NS: (If	different	from NA	SA)	
ADEQUATE [] INADEQUATE [] REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING	[.	/ 1	[]	[]		[]
REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING	* CIL RETENTI	ON RATIONAI	LE: (If a	pplicabl	ADEQUATE	
	REF: RI/NASA	. CIL OF 12-	-23-87 AN	D RI/NAS		•

ASSESSMENT DA ASSESSMENT ID NASA FMEA #:	: MPS-236	1		NASA DATA: BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM:	2361	DLINE REL	EF FLAME	ARRESTOR ((FL1)
LEAD ANALYST:	W.J.MCN	ICOLL			
ASSESSMENT:					
	CALITY LIGHT	REDUNDAN	CY SCREENS	5	CIL ITEM
HDW	/FUNC	A :	B 5	C	
NASA [1 IOA [3	/1] [/3] [NA] [NA] [NA] [NA] [NA]	[X] *
COMPARE [N]	
RECOMMENDATIO	ons: (If d	ifferent	from NASA))	
[/] [] [] [] (AI	[DD/DELETE)
* CIL RETENTI	ON RATIONAL	E: (If ap		ADEQUATE NADEQUATE	2
REMARKS: THE RI/NASA A REF: RI/NASA 87.	ANALYSIS IS A CIL OF 12-	FOR A COM 23-87 AND	PLETE BLOC	CKAGE OF FI	LOW.

ASSESSME ASSESSME NASA FME	NT ID:		-2371				BASELINE NEW		·]
SUBSYSTE MDAC ID: ITEM:	M:	MPS 2371 LH2		RIZATI	ON LIN	E VEN	T VALVE	(LV	52)
LEAD ANA	LYST:	W.J.	MCNICO	ΓŢ					
ASSESSME	NT:								
	FLI	ALITY GHT FUNC	RE:	DUNDAN	CY SCR	EENS C	•	CII	
	·				_	_		_	
NASA IOA		3] 3]	[NA [NA] [NA] NA]	[N	IA] IA]	[] *
COMPARE	[/]	[] []	[]	[1
RECOMMEN	DATION	is: ()	rf diff	erent	from N	ASA)			
_	[/]	[] []	[] (2] DELETE
* CIL RE						INA	DEQUATE]
REF: RI	/NASA	FMEA/C	IL REVI	EW MEE	TING N	OTES.			

ASSESSM ASSESSM NASA FM	ENT I	D:		372				2 %2	NASA I BASEI		[]	14.10
SUBSYST MDAC ID ITEM:			MPS 2372 LH2 P	RES	SURIZ	ATIO	lin	IE VE	NT VAI	LVE	(LVS	52)	
LEAD AN	ALYSI	·	W.J.M	CNI	COLL								
ASSESSM	ENT:												
	F	'LIGH				DANC	SCR	REENS			CII		
	HI	W/FU	NC		A	F	3		C	-			
NASA IOA	[3	3 /3]	[NA] NA]	1] 1]	NA] NA]]	NA] NA]		[]	*
COMPARE	C	/]	[]	[]	[]		[]	
RECOMME	NDATI	ons:	(If	di	ffere	nt fi	com N	IASA)					
	ĺ	/	1,	[]	[]	. []	(AI	[DD/I) ELE	TE)
* CIL R		NOI!	RATION	ALE	: (If	app]	licab	, , , ,	ADEQUA]	
	-	A FM	EA/CIL	RE	VIEW I	MEET]	NG N	OTES	•.				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/02/88 MPS-2373 0512-3	S-2373 BASELINE [] 12-3 NEW [X]							
SUBSYSTEM: MDAC ID: ITEM:	MPS 2373 LH2 PRESS	SURIZATIO	N LINE VI	ENT VALVE	(LV5:	2)			
LEAD ANALYST:	W.J.MCNIC	COLL							
ASSESSMENT:									
CRITICAL: FLIGH		REDUNDANC	Y SCREENS	5	CIL	4			
HDW/FUI	NC A	. :	В	С					
NASA [1 /1 IOA [1 /1] [N	[A] [] [A] []		NA] NA]	[X] *			
COMPARE [/] [] [] [1	[]			
RECOMMENDATIONS:	(If dif	ferent f	rom NASA))					
] [] [] [] . (AI	[DD/D1] ELETE)			
* CIL RETENTION I	RATIONALE:	(If app	licable)		_	_			
DEWS DVG			I	ADEQUATE ADEQUATE	[]			
REMARKS: REF: RI/NASA CII NOTES.	L OF 12-23	-87 AND	RI/NASA I	FMEA/CIL RE	EVIEV	WEETING			

ASSESSME ASSESSME NASA FME	NT .	ID:	MPS-	702/88 NASA DATA: PS-2381 BASELINE 551-3 NEW]	Far ve
SUBSYSTE MDAC ID: ITEM:			MPS 238: LH2		RTLS	INBO	ARD	VALV	E (PV	17)	-		
LEAD ANA	LYS'	T:	W.J	.MCNI	COLL								
ASSESSME	NT:												
		TICAL FLIGH		1	REDUN	DANCY	SCI	REENS			CIL ITE		
	H	DW/FU	NC	7	Α .	E	3		C				
NASA IOA	[3 /3 3 /3]	[]	NA] NA]	[N	IA] IA]]	NA] NA]		[X]	*
COMPARE	[/]	נ	1	[]	[1	-	[]	
RECOMMEN	DAT	ions:	(If di	ffere	nt fi	om l	NASA)					
-	[/]	[]	[]	[.]		[D/D		ETE)
* CIL RE	TEN	TION	RATI	ONALE	: (If	appl	ical		ADEQU IADEQU		[]	
REMARKS: BOTH IOA	AN	D RI/	'NASA	INDI	CATE	A CRI	TIC				r R	TL	5
ABORT. REF: RI	/NA	SA OF	12-	23-87	AND	RI/N	ASA	FMEA/	'CIL R	EVIEW	ME	ET]	ING

ASSESSME ASSESSME NASA FME	NT I	D:		382				N		DATA SELINE NEW	[x]	
SUBSYSTE MDAC ID:	M:		MPS 2382 LH2 F	EED	RTLS	INBO	ARD	VALVE	ı (I	V17)				
LEAD ANA	LYST	:	W.J.N	CNI	COLL									
ASSESSME	NT:													
	F	LIGH		1		DANCY B	SCF	REENS	!			[L CEM	ſ	
W) C)		•					7	rr			r	v	,	
NASA IOA		/1R /1R]	[]	P]	[F [F]	[F	.]		[X]	
COMPARE	[/]	[]	[]	[N]		[]	
RECOMMEN	DATI	ons:	(Ii	di	ffere	nt fr	om N	NASA)						
	[/	3	[]	ľ]	[]	, (A	[.DD/	/DF] ELJ	ETE)
* CIL RE	TENT	ION :	RATION	IALE	: (If	appl	icak	ole)						
										UATE UATE]	
REMARKS: REF: RI NOTES.	/NAS	A OF	12-23	8-87	AND	RI/NA	SA I						T)	[NG

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-2382	2A		NASA DATA: BASELINE NEW	
	2382	RTLS I	NBOARD VALV	Æ (PV17)	
LEAD ANALYST:	W.J.MCNI	COLL			
ASSESSMENT:					
CRITICAL: FLIGHT		REDUNDA	NCY SCREENS		CIL ITEM
HDW/FU		A	В	c	1104
NASA [2 /1R IOA [2 /1R] [P] P]	[F] [F] F]	[X] *
COMPARE [/] []	[] []	[]
RECOMMENDATIONS:	(If di	fferent	from NASA)		
[3 /3] [NA]	[NA] [[D] D/DELETE)
* CIL RETENTION I		: (If a		ADEQUATE IADEQUATE	[]
REMARKS: REF: RI/NASA OF	_	AND DT			
NOTES.					
IOA CRITICALITY V ASCENT. FAILURE					
MISSION. ENTRY I				RITICALITY	

ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:	MPS-2383		NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEM: MDAC ID: ITEM:	MPS 2383 LH2 FEED	RTLS INB	OARD VAL	VE (PV17)						
LEAD ANALYST:	W.J.MCNIC	OLL								
ASSESSMENT:										
CRITICA FLIG		EDUNDANC	Y SCREEN	S	CIL ITEM					
	UNC A		В .	С	TIEM					
NASA [1 /1 IOA [1 /1] [N	[A] [NA] [NA] [NA] NA]	[X] * [X]					
COMPARE [/) [] [] []	[]					
RECOMMENDATIONS	: (If dif	ferent f	rom NASA)						
[/	.] [] [] [] (A	[DD/DELETE)					
* CIL RETENTION	RATIONALE:	(If app	•	ADEQUATE NADEQUATE						
REMARKS: REF: RI/NASA O	F 12-23-87	AND RI/N	ASA FMEA	/CIL REVIE	W MEETING					

ASSESSMENT DAT ASSESSMENT ID: NASA FMEA #:			NASA DATA BASELINE NEW		
SUBSYSTEM: MDAC ID: ITEM:	MPS 2391 LH2 FEI	ED RTLS	VALVE (PV18)	and a second control of the second	
LEAD ANALYST:	W.J.MC	NICOLL			
ASSESSMENT:					
CRITIC FLI		REDUND	ANCY SCRE	ens	CIL ITEM
	FUNC	A	C	ITEM	
NASA [3 / IOA [3 /	3] 3]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[X] *
COMPARE [/	1	[]	[]	[]	[]
RECOMMENDATION	S: (If o	lifferen	t from NAS	SA)	
[/	,]	[]	[]	[] (A	[DD/DELETE)
* CIL RETENTIO	N RATIONAL	LE: (If	applicable	ADEQUATE INADEQUATE	
REMARKS: BOTH IOA AND R REF: RI/NASA NOTES.				~	OR ABORT.

ASSESSMI ASSESSMI NASA FMI	ENT I	D:	MPS-	2392						ASA DA BASELI N		•]	
SUBSYSTI MDAC ID: ITEM:			2392		RTLS	OUTB	OARI	D VAI	LVE	E (PV1	8)			
LEAD ANA	ALYSI	! :	W.J.	MCNIC	OLL									
ASSESSMI	ENT:													
		'ICAL 'LIGH	ITY T	R	EDUN	DANCY	sci	REENS	3			CIL ITE		
	_		NC	A		В			С		-		2.1	
NASA IOA	[2	/1R]	[P]	[F [F]	[P F]	[[X]	*
COMPARE	[/	1	[]	[]	[N]	l]	
RECOMMEN	IDATI	ons:	(I	f dif	fere	nt fr	om 1	NASA))					
-	[/]	[]	[]	[]	(ADI	[D/D	EL.	ETE
* CIL RI	ETENT	ION :	RATIO	NALE:	(If	appl	ical	ole)				-	_	
								I		EQUAT EQUAT		:]	
REMARKS: REF: RI NOTES.		A OF	12-2	3-87	AND	RI/NA	SA 1	FMEA/	/CI	L REV	IEW	ME	ET:	ING

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-2392	A	NASA DATA BASELINE NEW		
	MPS 2392 LH2 FEED	RTLS OUT	BOARD VAI	LVE (PV18)	
LEAD ANALYST:	W.J.MCNI	COLL			
ASSESSMENT:					gen de la companya de
FLIGH	ITY I T NC 2			C which the	CIL ITEM
NASA [2 /1R IOA [2 /1R			F] [F] [F] F]	[X] *
COMPARE [/] [] [] []	[]
RECOMMENDATIONS:	(If di	fferent f	rom NASA)	
[3 /3] []	NA] [NA] [[D] DD/DELETE)
* CIL RETENTION	RATIONALE	: (If app		ADEQUATE NADEQUATE	[]
REMARKS: REF: RI/NASA OF NOTES. IOA CRITICALITY ASCENT. FAILURE MISSION. ENTRY	WAS DRIVE	N BY FAIL POST-MEC	URE TO RICO HAS NO	CIL REVIE	W MEETING ED DURING A NOMINAL
ABORT ONLY.					

ASSESSM ASSESSM NASA FM	ENT :	ID:	MPS-	2393		NASA DATA: BASELINE [] NEW [X]							
SUBSYST			MPS 2393 LH2		RTLS	OUT	BOARD	VA	LVE (1	PV18)			
LEAD AN	ALYS	r:	W.J.	MCNI	COLL								
ASSESSM	ENT:												
	I	LIGH	ITY T NC				Y SCR	EENS	s C		CII	_	
WAGA							_	_					
NASA IOA	[]	1 /1]	[]	IA] IA]	[NA] NA]	[NA] NA]		K] K]	<pre></pre>	
COMPARE	ι	/]	[]	[1	[]		[]	
RECOMMEN	ITAGI	ons:	(I	f dif	fere	nt f	rom N	ASA)					
	[/]	[1	[]	[]		[D/D] ELETE	;)
* CIL RI	ETENI	'ION	RATIO	NALE:	(If	app	licab	le)					
REMARKS:					•			•	ADEQU ADEQU		[]	
REF: RI		A OF	12-2	3-87	AND	RI/N	ASA F	MEA/	CIL F	EVIE	, ME	ETING	

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			NASA DATA BASELINE NEW	[x]
SUBSYSTEM: MDAC ID: ITEM:	MPS 3010 ENGINE	HELIUM SUPPLY	CHECK VALVE (C	V1,CV2,CV3)
LEAD ANALYST:	M.L.MCN	EELY		
ASSESSMENT:				्राज्यकृष्णम् अस्ति ।
FLIGH	T	REDUNDANCY SO	C	CIL
NASA [3 /1F IOA [3 /2F		P] [F] P]	[F] [P]	[X] *
COMPARE [/N] [] []	[N]	[]
RECOMMENDATIONS:	(If d	ifferent from	NASA)	
[3 /11	?][P] [F]	[P] (A	[] .DD/DELETE)
* CIL RETENTION	RATIONAL	E: (If applica	able) ADEQUATE INADEQUATE	[]
REMARKS: A SINGLE ENGINE CREW OR VEHICLE REF: RI/NASA C: NOTES.	. NSTS 2	2206 2.3.3L RI	EQUIRES ASSIGNM	ENT OF $3/1R$.

ASSESSMENT DATE: 2/03/88 ASSESSMENT ID: MPS-3011 NASA FMEA #: 0202-2							NASA DATA: BASELINE [] NEW [X]								
SUBSYSTE MDAC ID:			MPS 301 ENG	1	HELIUN	f SUP	PLY (НЕСК	VALVE	(CV1,	CV2,CV	3)			
LEAD ANA	LYSI	r:	M.L	. MCNI	EELY										
ASSESSME	NT:														
		TICAL FLIGH			REDUN	IDANC	Y SCF	REENS		CII					
	HI	W/FU	NC		A		В	(C						
NASA IOA	[3	3 /3]	[[NA] NA]	[]	NA] NA]	[]	NA] NA]]] *				
COMPARE	[/]	, , (1	[]	[1	[]				
RECOMMEN	DATI	ons:	(:	If di	.ffere	nt f	rom N	ASA)							
	[/]	[]	ľ]	[]	[(ADD/E] ELETE)			
* CIL RE	TENT	NOI	RATIO	ONALE	: (If	app	licab	-							
DEWI DVC -									ADEQUAT: ADEQUAT:]]				

REF: RI/NASA FMEA/CIL REVIEW MEETING NOTES.

ASSESSME ASSESSME NASA FME	INT	II):	MPS-3020 BASELINE							Ī]	# *				
SUBSYSTEMDAC ID: ITEM: (PD8)	:			MPS 302 HEL	0	s	UΡ	PLY I	ois	SCC	N	NECT (DRI	B/GND, OF	RB	НА	LF),
LEAD ANA	ALYS	ST	•	M.I	. MCl	NE	EL	Y										
ASSESSMI	ENT	:										./						
	CR		CAL				RE	DUNDA	ANC	CY	S	CREENS	3		CI	L EM		
]		/FU				A			В			С					
NASA IOA	[3	/1R /2R]		[P P]	[F F]	[F P]	[X X]	* :
COMPARE	[/N]		[]	[]	[N]	[]	
RECOMME	NDA'	TI	SMC:	(If	di	ff	erent	t :	fro	om	NASA)					
-	[3	/1R	1		[P]	[F]	[(Al		'DE		TE)
* CIL R	ETE	NT:	ION	RATI	ONA	LE	E:	(If	apj	pl.	ic		A	DEQUATE DEQUATE]	
ENGINE SECOND	FAI SHU ENG	TD IN	OWN. E SH	F? UTD(NILU	RI AN	ID	F ANG LOSS	OTI O	HE F	R VE	CHECK	•	F HELIUM ALVE WIL SCREEN (EA/CIL RI	C S	CAU	UL	i A iD

ASSESSMI	SESSMENT DATE: 2/03/88 SESSMENT ID: MPS-3021 SA FMEA #: 0201-3							NASA DATA: BASELINE [] NEW [X]									
SUBSYSTEMDAC ID: ITEM: (PD8)				3021	M :	SU	PPLY	DI	s	co	NNEC:	r	(0	RB/GND,	ORB	HA	LF),
LEAD ANA	ALY:	ST	:	M.L.M	CN:	EE:	LY										
ASSESSME	ENT	:															
		F	LIGH'	ITY T NC		RI A		DAN		Z 3	SCREI	EN	s c		CII		
NASA IOA	[3	/3 /2R]	[NZ P	A]]	[ŀ	VA F]	[N. P	A]] []	.] .]	*
COMPARE	[/N]	[N]	[N	1	1 .	[N]	[]	[]	
RECOMMEN	IDA:	ric	ONS:	(If	d :	ifi	ferer	ıt	fı	0	m NAS	SA)				
-	[3	/1R]	[P]	[F	?] -	[P		ADD/D		
* CIL RE	TE	NT:	ION 1	RATION	ÄLI	E:	(If	ap	p1	Li	cable	•		DEQUATE DEQUATE]	
REMARKS: SECOND F HELIUM A WILL CAU ANALYSIS REF: RI	AII ND ISE 02	A) <u>A</u> 201	N ENC SECC 1-3 (SINE SI OND ENC COULD	HU: GII BE	PDC NE CC	OWN. SHUT OMBIN	F) DOI: E I	IA NN VI	L T	URE C AND I H 020	W:)F ,OS	[L] A] SS -4	L CAUSE NOTHER OF VEH	LOSS CHECK	v	F ALVE

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/03/88 MPS-3021A 0201-4	A: E [] V [X]									
SUBSYSTEM: MDAC ID: ITEM: (PD8)	MPS 3021 HELIUM SUPPLY DISC	ORB HALF),									
LEAD ANALYST:	M.L.MCNEELY										
ASSESSMENT:	ASSESSMENT:										
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM											
	1C Y 1	В С									
NASA [2 /1R IOA [3 /2R] [P] []	F] [P] F] [P]	[X] *								
COMPARE [N /N	1 - [1] [1 []	1,								
RECOMMENDATIONS:	(If different f	rom NASA)									
[3 /1R] [P] [3	F] [P] (AD	[] DD/DELETE)								
* CIL RETENTION	RATIONALE: (If app	licable) ADEQUATE INADEQUATE									
HELIUM AND AN EN	GINE SHUTDOWN. FA	CHECK) WILL CAUSE I ILURE OF ANOTHER CH N AND LOSS OF VEHIC RI/NASA FMEA/CIL RE	HECK VALVE								

ASSESSME ASSESSME NASA FME		2/03/8 MPS-30 NA					1	NASA DA' BASELI N]
SUBSYSTE MDAC ID: ITEM:		MPS 3030 TEST P	ORT	(TP8)						
LEAD ANA	LYST:	M.L.MC	NEE	LY							
ASSESSME	ENT:										
	CRITICAL FLIGH		R	EDUND	ANCY	SCRE	ENS			CIL [TE	
	HDW/FU	NC	A		В		(2			
NASA IOA	[/ [3 /2R]	[[P]	[[F]	[]	·]		[[] *]
COMPARE	[N /N	1	[N]	[N]	[1	1]	1	N]
RECOMMEN	DATIONS:	(If	dif	feren	t fr	om NA	SA)				
•	[/	1	[]	[]	[]	l ADI	[D/DI] ELETE
* CIL RE	TENTION	RATIONA	LE:	(If a	appl	icabl				•	
							INA	ADEQUATI ADEQUATI	E (:]
	LURE IS					SA 02	34-1	AND I	OA 4	1620	ο,

ASSESSMEN ASSESSMEN NASA FMEA	T ID:	MPS-3040	BASELINE []								
SUBSYSTEM MDAC ID: ITEM:	ITEM: 17.3 CU. FT. HELIUM SUPPLY TANK (TK6, 8, 10)										
LEAD ANAL	YST:	M.L.MCNE	EELY								
ASSESSMEN	T:										
C	RITICALI FLIGHT		REDUNDANG	CY SCREENS	5	CIL ITEM					
	HDW/FUI	4C	A : .	В	c						
NASA IQA	[1 /1 [2 /2] [NA] [NA] [NA] [NA] [NA] NA]	[X] *					
COMPARE	[N /N] [] [] []	[]					
RECOMMEND	ATIONS:	(If di	ifferent	from NASA)						
_	[/] [] [] [] (A)	[DD/DELETE)					
* CIL RET	TENTION 1	RATIONALI	E: (If ap	plicable) I	ADEQUATE NADEQUATE						
REMARKS: POSSIBLE REF: RI/ NOTES.	OVERPRE	SSURIZATI L OF 12-2	CON. 23-87 AND	RI/NASA	FMEA/CIL R	eview meeting					

ASSESSMENT DATE: 2/03/88 ASSESSMENT ID: MPS-3050 NASA FMEA #: 0203-2										[
SUBSYSTEM: MPS MDAC ID: 3050 ITEM: 4.7 CU. FT. HELIUM SUPPLY TANK (TK1)									, 2	, 3 ,	,7,	,9,11)				
LEAD ANA	LY	ST	:	M.	L.M	CNI	EELY									
ASSESSME	NT	:														
											CIL ITEM					
NASA IOA	[1 2	/1 /2]		[NA] NA]]	NA] NA]]	NA] NA]		[X X]	*
COMPARE	[N	/N]		[]	[]	[]		[]	
RECOMMEN	IDA'	ri(ons:		(If	d :	iffe	rent	from	NASA) .					
	[/]		[]	[]	[]	(A		/DI		ETE)
* CIL RE	TE	NT:	ION	RAT	rion.	AL	E: (If ap	plica		ADEQI NADEQI	JATE JATE]	
REMARKS: POSSIBLE REF: RI NOTES.	: O							7 AND	RI/I			_	•	ΙEΊ	W 1	MEETING

ASSESSMENT ID:	SMENT DATE: 2/03/88 SMENT ID: MPS-3050A FMEA #: 0203-1 STEM: MPS NASA DATA BASELINE NEW										
SUBSYSTEM: MDAC ID: ITEM:	3050 4.7 CU. FT. HELIUM SUPPLY TANK (TK1,2,3,7,9,1										
LEAD ANALYST:	M.L.MCNEELY										
ASSESSMENT:											
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM											
	NC A B	C									
NASA [2 /1R IOA [2 /2] [P] [P] [] [NA] [NA] [P] NA]	[X] * [X]								
COMPARE [/N] [и] [и] [и ј	[]								
RECOMMENDATIONS:	(If different from NASA)									
[1 /1] [NA] [NA] [NA]	[] D/DELETE)								
* CIL RETENTION H	RATIONALE: (If applicable)	ADEQUATE NADEQUATE	f" 1								
REMARKS: THIS RI/NASA ANAL OVERPRESSURIZATION	REMARKS: THIS RI/NASA ANALYSIS SHOULD BE COMBINED WITH 0203-2. POSSIBLE										
	L OF 12-23-87 AND RI/NASA	FMEA/CIL RE	VIEW MEETING								

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	NASA DATA BASELINE NEW										
SUBSYSTEM: MDAC ID: ITEM:	,2,3,7,9,11)										
LEAD ANALYST:	M.L.MCNI	EELY									
ASSESSMENT:											
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C											
,		NA] [NA] NA] [NA]	r NA1	r ¥ 1 *							
NASA [1 /1 IOA [2 /2	; [NA] [NA]	[NA]	[X] * [X]							
COMPARE [N /N] [] []	[]	[]							
RECOMMENDATIONS:	(If d:	ifferent from NA	SA)								
] [] []	[] (A	[] DD/DELETE)							
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE []											
INADEQUATE [] REMARKS: POSSIBLE OVERPRESSURIZATION. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.											

ASSESSMI ASSESSMI NASA FMI	ENT	I		MPS-						ASA 1 BASE	LINE	[[X		
SUBSYSTI MDAC ID: ITEM:				MPS 3060 PRES	SURE '	ΓAΡ	PORT	(TP2	26,27,	28)				
LEAD AND	\LY:	ST	:	M.L.	MCNEE:	LY								
ASSESSMI	ENT	:												
		F	LIGH	T	R) A				REENS C			CIL	I	
MACA												r	1 +	
IOA	[2	/2	1	[N	A]	[N	IA]	[N	A]	,	[X] "	
COMPARE					[N									
RECOMMEN	IDA'	TI(ons:	(1	f dif	fer	ent fr	om N	NASA)					
_	[/]	[]	[]	[]	(AI	[DD/DE] LETI	E)
* CIL RI		NT:	ION .	RATIC	NALE:	(I:	f app]	licak	ole) A INA	DEQUI	ATE ATE	[]	;
THIS FAI	[LU							ASA (252-1	AND	IOA	4620	,	=:

	NT ID:	: 2/03/88 MPS-30 0258-2		NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEM: MPS MDAC ID: 3070 ITEM: ENGINE HELIUM SUPPLY CHECK VALVE (CV25,26;36,37;41,42) LEAD ANALYST: M.L.MCNEELY											
LEAD ANA	LYST:	M.L.MC	NEELY								
ASSESSME	NT:										
	CRITICA FLIG		REDUND	ANCY SCRE	ENS	CIL ITEM					
		UNC	A	В	С	TIEM					
NASA IOA	[2 /1 [3 /3	R]	[P] [NA]	[F] [NA]	[P] [NA]	[X] *					
COMPARE	[N /N]	[N]	[N]	[N]	[N]					
RECOMMEN	DATIONS	: (If o	differen	t from NA	SA)						
-	[3 /3]	[NA]	[NA]		[D] ADD/DELETE)					
	* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []										
A SINGLE	SINGLE FAILURE WILL HAVE NO EFFECT. LEAKAGE OF UPSTREAM LINE IS A SINGLE FAILURE POINT. REF: RI/NASA OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING										

ASSESSMI	ENT DATE: ENT ID: EA #:	MPS-3070A			NASA DATA BASELINE NEW	[X]
SUBSYSTI MDAC ID: ITEM: (CV25,26		MPS 3070 ENGINE HE 1,42)	LIUM SUI		K VALVE	kan bering sa
LEAD AND	ALYST:	M.L.MCNEE	LY			
ASSESSMI	ENT:	-				
	CRITICAL: FLIGHT HDW/FUT	•		CY SCREEN B	S	CIL ITEM
NASA IOA	[/] [N] [A] [] [NA] [NA]	[]*
COMPARE	[N /N] [N] [и] [n]	[]
RECOMMEN	NDATIONS:	(If dif	ferent i	from NASA)	
-	[3 /3] [N	A] [NA] [NA]	[DD/DELETE)
	ETENTION I	RATIONALE:	(If app	-	ADEQUATE NADEQUATE	į
THE VALV	VE IS NOT	REQUIRED 12-23-87.	TO REMAI	N CLOSED	•	. 그 여행(원)
-:-: -:-::						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-3071	BASELINE []					
SUBSYSTEM: MDAC ID: ITEM: (CV25,26;36,37;4)	3071 ENGINE HE	ELIUM SUP	PLY CHECH	K VALVE			
LEAD ANALYST: M.L.MCNEELY							
ASSESSMENT:							
CRITICAL FLIGH	ITY R	REDUNDANC	Y SCREENS	5	CIL ITEM		
HDW/FU		A	В	c			
NASA [3 /3 IOA [3 /2R] [N] [P	MA] [.	NA] [F] [NA] P]	[x] *		
COMPARE [/N] [N	4] [и ј [N]	[N]		
RECOMMENDATIONS:	(If dif	fferent f	rom NASA))			
_ [3 /1R] [P	?][F] [[A] DD/DELETE)		
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []							
REMARKS: FAILURE OF BOTH CHECK VALVES IN AN ENGINE SYSTEM WILL CAUSE ENGINE SHUTDOWN AND LOSS OF MISSION. NSTS 22206 2.3.3L REQUIRES ASSIGNMENT OF 3/1R. REF: RI/NASA FMEA/CIL REVIEW MEETING NOTES.							

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-3080	NASA DATA: BASELINE [] NEW [X]
SUBSYSTEM: MDAC ID:	ENGINE HELIUM SUPPLY FIL	TER - PANEL A; B
LEAD ANALYST:	M.L.MCNEELY	
ASSESSMENT:	•	the second secon
FLIGH	ITY REDUNDANCY SCREE T NC A B	NS CIL ITEM
NASA [3 /1R IÕA [3 /2R] [P] [F]	[P] [X]* [P] [X]
COMPARE [/N] [] []	[] []
RECOMMENDATIONS:	(If different from NAS	A)
[3 /1R] [P] [F]	[P] [] (ADD/DELETE)
	RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []
MISSION. NSTS 23	CY RESULTS IN SHUTDOWN OF 2206 2.3.3L REQUIRES ASSICT OF 12-23-87 AND RI/NASA	GNMENT OF 3/1R.

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-3081	NASA DATA BASELINE NEW	• -
SUBSYSTEM: MDAC ID: ITEM: (FL2,6;3,7;4,8)	MPS 3081 ENGINE HELIUM SU	A;B	
LEAD ANALYST:	M.L.MCNEELY		
ASSESSMENT:			
CRITICAL FLIGH	T	CY SCREENS	CIL ITEM
HDW/FU	NC A	ВС	
NASA [1 /1 IOA [3 /2R] [NA] [] [P] [NA] [NA] F] [P]	[X] * [X]
COMPARE [N /N] [и] [и ј [иј	[]
RECOMMENDATIONS:	(If different	from NASA)	
. [/] [] [] [] (A	[] DD/DELETE)
* CIL RETENTION	RATIONALE: (If app	plicable) ADEQUATE INADEQUATE	[]
	AN CAUSE OVERPRES L OF 12-23-87 AND		

ASSESSMI ASSESSMI NASA FMI	ENT :	ID:	MPS-3					NASA DATA BASELINE NEW]
SUBSYSTIMDAC ID ITEM: (FL2,6;	•		MPS 3082 ENGIN	E HEL	.IUM SU	PPLY FI	LTF	R - PANEL	A;B	
LEAD AN	ALYS'	T:	M.L.M	CNEEL	Y					
ASSESSM	ENT:									
	,	FLIGH	ITY T NC		DUNDAN	CY SCRE	ENS	c .	CIL	И
NASA IOA	[2 /2]	[[NA] [NA]	[[NA]	[x] *
COMPARE	[n /n	1	[14] [и]	[и]	[N]
RECOMME	TADN	ions:	(If	diff	erent	from NA	SA)			
-	[2 /2]	[NA	.] [NA]	[NA]	[A DD/DI] ELETE)
* CIL R		TION	RATION	ALE:	(If ap	plicable		ADEQUATE IADEQUATE]]
REMARKS	•									

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/03/88 MPS-3090 0204-1	S-3090 BASELINE []							
SUBSYSTEM: MDAC ID: ITEM: (LV1,2;3,4;5,6)	MPS 3090 ENGINE HELIUM SU								
LEAD ANALYST:	M.L.MCNEELY								
ASSESSMENT:									
CRITICAL FLIGH		CY SCREENS	CIL ITEM						
HDW/FU		ВС							
NASA [3 /3 IOA [3 /2R] [NA] [!] [P] [NA] [NA] P] [P]	[] *						
COMPARE [/N] [N] [и] [и]	[]						
RECOMMENDATIONS:	(If different	from NASA)							
. [/] [] [] [] (A	[] DD/DELETE)						
* CIL RETENTION	RATIONALE: (If ap	plicable) ADEQUATE INADEQUATE							
EFFECT OF FAILUR		THE FAILURE TO REM							

ASSESSMENT DAT ASSESSMENT ID: NASA FMEA #:	MPS-309	0 A		NASA DATA BASELINE NEW		
SUBSYSTEM: MDAC ID: ITEM: (LV1,2;3,4;5,6	ENGINE	HELIUM SUI	PPLY ISO	LATION VALV	E	
LEAD ANALYST:	M.L.MCN	EELY				
ASSESSMENT:						
FLI	ALITY GHT				CIL	
HDW/	FUNC	A	В	С		
NASA [3 / IOA [3 /	1R] [2R] [P] [F] P]	[P] [P]	[X] *	
COMPARE [/	,][[] [n]	[]	[N]	
RECOMMENDATION	S: (If d	ifferent i	rom NAS	A)		
_ [3/	1R] [P] [P]		[D] DD/DELETE)	
* CIL RETENTIO	N RATIONAL	E: (If app) ADEQUATE INADEQUATE	[]	
REMARKS: SECOND FAILURE WILL CAUSE ENGINE SHUTDOWN AND LOSS OF MISSION. NSTS 22206 2.3.3L REQUIRES ASSIGNMENT OF 3/1R. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.						

ASSESSM ASSESSM NASA FM	ENT ID	TE: 2/0: : MPS: 020	-3091			nasa i Basei	
SUBSYST MDAC ID ITEM: (LV1,2;	:		l INE HELIU	JM SUPPL	VALVE		
LEAD AN	ALYST:	M.L	MCNEELY				
ASSESSM	ENT:						
	FL	CALITY IGHT /FUNC	REDU A	INDANCY B	SCREEN	s C	CIL ITEM
NASA IOA	•	•	[NA] [NA]	[NA [NA	.] [.	NA] NA]	[]
COMPARE	[.	/]	[]	[1 , c]	[]
RECOMME	NDATIO:	ns: (If differ	rent fro	m NASA)	

ASSESSME ASSESSME NASA FME	NT I	D:	MPS-3	99	2						SA DATA: ASELÎNE NEW	[]	ung en	; ;
SUBSYSTE MDAC ID: ITEM: (LV1,2;3			MPS 3092 ENGINI	E 1	HEL]	IUM SU	PE	LLY I	SOL	ATIC	N VALVI					क्षा भाग है है । इस मार्ग के स्वर्ध
LEAD ANA	LYST	:	M.L.M	CN	EEL	Z										
ASSESSME	NT:															
		ICAL:	ITY r		REI	OUNDAN	CY	SCR	EENS	3		C]	CL CEM	ī		
		5 4 S S S S S S S S S S S S S S S S S S	NC		A		E	3		С						
NASA IOA	[2 [2	/1R /2]	֚֭֭֭֭֝֝֞֝֟֝֝֟֝֟֝֟֝֟֟֝֟֟	P NA] [F	r] IA]]	P] NA]		֭֝֞֟֝֟֝֟֝֟֝֟֝֟֝	X X]	*	
COMPARE	[/N]	[N ;] [N	1]	[N]	l	[]		
RECOMMEN	DATI	ONS:	(If	đ:	iffe	erent	fr	om N	ASA)							
-	[2	/2]	[NA :] [N	IA]	[NA]	(AI	[\QC	/DE] LE	TE)	
* CIL RE		ION I	RATION	AL	E: ((If ap	pl	.icab		ADE	EQUATE	[]		na la gar
REMARKS: FAILURE REF: RI NOTES.	WILL										MISSIC			М	EET	ING

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-3092A	NASA DATA BASELINE NEW						
MDAC ID:	MPS 3092 ENGINE HELIUM	E						
LEAD ANALYST: M.L.MCNEELY								
ASSESSMENT:								
CRITICAL FLIGH		DANCY SCREENS	CIL ITEM					
HDW/FU	NC A	ВС						
NASA [1 /1 IOA [2 /2] [NA]] [NA]	[NA] [NA] [NA] [NA]	[X] * [X]					
COMPARE [N /N] []	[] []	[]					
RECOMMENDATIONS:	(If differen	nt from NASA)						
. [/] []	[] [] (A)	[] DD/DELETE)					
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE []								
INADEQUATE [] REMARKS: POSSIBLE OVERPRESSURIZATION. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.								

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-3110	ATA: INE [] IEW [X]			
SUBSYSTEM: MDAC ID: ITEM:	MPS 3110 ENGINE F	HELIUM	PRESSURE	REGULATOR	(PR1,7;2,8;3,9)
LEAD ANALYST:	M.L.MCNE	EELY		•	
ASSESSMENT:					
CRITICAL: FLIGH		REDUND	ANCY SCRI	EENS	CIL ITEM
HDW/FU	_	A	В	С	TIEM
NASA [3 /1R IOA [3 /2R] [P] P]	[F]	[P] [P]	[X] *
COMPARE [/N] []	[N]	[]	[N]
RECOMMENDATIONS:	(If di	ifferen	t from NA	ASA)	
[3 /1R] [P]	[P]	[P]	[D] (ADD/DELETE)
* CIL RETENTION	RATIONALE	E: (If	applicab]	Le) ADEQUAT INADEQUAT	
REMARKS: SECOND FAILURE W NSTS 22206 2.3.3 REF: RI/NASA CI NOTES.	L REQUIRE	ES ASSI	GNMENT OF	7 3/1R.	S OF MISSION.

ASSESSME ASSESSME NASA FME	NT	I	D:	ME	PS-3	11(ΟA									SA DA BASELI N		[]		
SUBSYSTE MDAC ID: ITEM:				31	MPS 3110 ENGINE HELIUM PRESSURE REGULATOR (PR								R1	, 7	; 2	,8;	3,9)					
LEAD ANA	LY	ST	:	M.	M.L.MCNEELY																	
ASSESSME	NT	:																				
	CR		ICAL LIGH				RI	EDUNI	DAI	10	Y:	SCRI	ee]	NS					L LEI			
			W/FU				A				В	-		(С			1.	LEI	3		
NASA IOA	[2	/1R /2R]		[P P]			F P]		[]	P P]		[X]	*	
COMPARE	[N	/N)		[]			N]		[]		[N]		
RECOMMEN	DA	TI	ons:		(If	đ:	ifi	ere	nt	f	rc	om Na	AS	A)								
-	[3	/1R]		[P	3	1		P]		[]	P]	(AI			ELJ]	ETE)
* CIL RE	TE	NT:	ION	RAI	ION	ALI	Ε:	(If	aj	g	11	lcab]		•	AD AD	EQUAT	E F	[]		
ADEQUATE [] INADEQUATE [] REMARKS: SECOND FAILURE WILL CAUSE ENGINE SHUTDOWN AND LOSS OF MISSION. NSTS 22206 2.3.3L REQUIRES ASSIGNMENT OF 3/1R. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.																						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-3111	111 BASELINE						
SUBSYSTEM: MDAC ID: ITEM:	MPS 3111 ENGINE HELIUM F	FOR (PR1,7;2,8;3,9)						
LEAD ANALYST:	M.L.MCNEELY							
ASSESSMENT:								
CRITICAL: FLIGHT	ITY REDUNDA	NCY SCREENS	CIL ITEM					
HDW/FUI		В С						
NASA [2 /1R IOA [2 /2] [P]] [NA]	[F] [P] [NA]	[X] * [X]					
COMPARE [/N] [N]	[и] [и]	[]					
RECOMMENDATIONS:	(If different	from NASA)						
[1 /1] [NA]	[NA] [NA]	[] (ADD/DELETE)					
* CIL RETENTION 1	RATIONALE: (If a		QUATE [] QUATE []					
AFT COMPARTMENT.	#		VERPRESSURIZE THE					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [] NEW [X]									
	MPS 3112 ENGINE HELIUM	PRESSURE REGULATOR (F	PR1,7;2,8;3,9)								
LEAD ANALYST:	M.L.MCNEELY	.L.MCNEELY									
ASSESSMENT:											
CRITICAL FLIGH HDW/FU	CIL ITEM										
nDW/f0	NC A	В С									
NASA [1 /1 IOA [2 /2] [NA]] [NA]	[NA] [NA] [NA] [NA]	[X] * [X]								
COMPARE [N /N] []	[] []	[]								
RECOMMENDATIONS:	(If differe	nt from NASA)									
. 1] []	[] []	[] ADD/DELETE)								
* CIL RETENTION	DAMTONATE: /TE	applicable)									
* CIL RETENTION	RATIONALE: (II	ADEQUATE INADEQUATE									
REMARKS: POSSIBLE OVERPRE REF: RI/NASA CI NOTES.		AND RI/NASA FMEA/CIL F	REVIEW MEETING								

ASSESSMENT DAY ASSESSMENT ID NASA FMEA #:	: MPS-3120)		BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM: (RV1,8;2,9;3,		E RELIEF	VALVE PAN	IEL A;B	
LEAD ANALYST:	M.L.MCNE	ELY			
ASSESSMENT:					
	CALITY IGHT	REDUNDANG	CY SCREENS	.	CIL ITEM
		A	В	C	. 5
NASA [2 ,	/1R] [/2] [P] [NA] [F] [NA] [P] NA]	[X] *
COMPARE [,	/n] [и] [и] [и]	[]
RECOMMENDATION	NS: (If di	fferent i	from NASA)		
[1,	/1] [NA] [NA] [[] DD/DELETE)
* CIL RETENTIO	ON RATIONALE	: (If app	·	ADEQUATE IADEQUATE	
REMARKS: POSSIBLE OVER: CAUSED BY LOSS REF: RI/NASA	S OF HELIUM	(2/2).	POSSIBI	E ENGINE S	HUTDOWN

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-3120A		BASELINE NEW]
SUBSYSTEM: MDAC ID: ITEM: (RV1,8;2,9;3,10)	MPS 3120 ENGINE HE RE	LIEF VALVE PA	NEL A;B		
LEAD ANALYST:	M.L.MCNEELY				
ASSESSMENT:					
CRITICAL FLIGH	T	INDANCY SCREEN		CIL	
HDW/FU		В	C		
NASA [3 /3 IOA [2 /2] [NA]] [NA]] [AN]] [AN]	NA] NA]	[x] *]
COMPARE [N /N] []	[] [1	[N]
RECOMMENDATIONS:	(If differ	rent from NASA)		
[1 /1] [NA]	[NA] [NA]	A]] ELETE)
* CIL RETENTION	RATIONALE: (ADEQUATE NADEQUATE	[]
REMARKS: POSSIBLE OVERPRE REF: RI/NASA CI					

	ENT ID:	MPS-312 0206-1			BASELIN NE	E [] W [X]
SUBSYSTI MDAC ID: ITEM:	EM:	MPS 3121 ENGINE	HE REL	IEF VALVE	PANEL A;B	en e
LEAD ANA	ALYST:	M.L.MC	NEELY			
ASSESSMI	ENT:					and a supplied to the control of
	CRITICA:	LITY HT	REDUNI	DANCY SCRI	EENS	CIL ITEM
			A	В	C	
NASA IOA	[2 /1] [2 /2	R]	P] NA]	[F] [NA]	[P] [NA]	[X] * [X]
COMPARE	[/N] [N]	[и]	[N]	[]. distance a
RECOMMEN	NDATIONS	: (If d	liffere	nt from N	ASA)	
	[1 /1] [NA]	[NA]		[] ADD/DELETE)
		RATIONAL	E: (If	applicab	le) ADEQUATE INADEQUATE	
	OVERPR	ESSURIZAT		/1).		\$ 4 € 6 ° °

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-3122	NASA DATA: BASELINE [] NEW [X]
	MPS 3122 ENGINE HE RELIEF VALVE PAN	EL A;B
LEAD ANALYST:	M.L.MCNEELY	
ASSESSMENT:		
CRITICAL: FLIGHT	r	CIL ITEM
HDW/FU	NC A B	С
NASA [2 /1R IOA [2 /2] [P] [NA] [NA] [NA] [P] [X] * NA] [X]
COMPARE [/N] [N] [] [ן וו
RECOMMENDATIONS:	(If different from NASA)	
. [/] [] []] [] (ADD/DELETE)
* CIL RETENTION F		ADEQUATE []
REMARKS:	IN	ADEQUATE []
POSSIBLE OVERPRES	SSURIZATION UPON SECOND FAI L OF 12-23-87 AND RI/NASA F	

ASSESSME ASSESSME NASA FME	NT	II			-3123			1	NASA DATA BASELINE NEW]	
SUBSYSTE MDAC ID: ITEM: (RV1,8;2					3 INE HE	RELIEF	VALVE	PAN	EL A;B			·
LEAD ANA	LYS	T	:	M.L	.MCNEE	ΓA						
ASSESSME	NT:	:										
CRITICALITY REDUNDANCY SCREENS FLIGHT										CIL ITEM		
	I	IDI	N/FU	NC	A		В	(С			
NASA IOA	[[1 2	/1 /2]	[N	A] [A] [NA] NA]	[]	NA] NA]	X] X]]	*
COMPARE	(N	/N	3	[] []	[1	[]	
RECOMMEN	IDA!	ΓI	ons:	(If dif	ferent	from N.	ASA)				
-	ι		<i>'</i>]	[] []	[]	[DD/E) EL	ETE)
	ā	NT	ION	RATI		(If ap	plicab		ADEQUATE ADEQUATE	l]	
REMARKS POSSIBLE REF: R: NOTES.	₽ O`	VE AS	RPRI A C	ESSUR L OF	IZATIO 12-23	N. -87 AND	RI/NA	SA F	MEA/CIL I	REVII	W	MEETING

ASSESSME		2/03/88 MPS-313			NASA DATA BASELIN	
NASA FMI SUBSYSTI MDAC ID:	EM:	MPS 3130				
ITEM:		ENGINE	HELIUM	SUPPLY RI	ELIEF VALVE	SENSE LINE
LEAD ANA	ALYST:	M.L.MCN	EELY			
ASSESSMI	ENT:					
	CRITICAL:		REDUNI	DANCY SCRI	EENS	CIL ITEM
	HDW/FU		A	В	C	222.
NASA IOA	[/ [2 /2] [NA]	[] [AN]	[] [NA]	[x] *
COMPARE	[N /N] [и]	[N]	[N]	[N]
RECOMMEN	NDATIONS:	(If d	iffere	nt from N	ASA)	
	[1 /1] [NA]	[NA]	[NA]	[A] ADD/DELETE
* CIL RI	ETENTION :	RATIONAL	E: (If	applicab	le) ADEQUATE INADEQUATE	
REMARKS			7417		THYDEGOVIE	L J
POSSIBLE	E OVERPRE	SSURIZAT	TON.			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/03/88 MPS-3140 0207-2	2/03/88 NASA DATA MPS-3140 BASELINE D207-2 NEW								
MDAC ID:	MPS 3140 ENGINE REG OUTI									
LEAD ANALYST:	M.L.MCNEELY									
ASSESSMENT:										
CRITICAL FLIGH	CIL ITEM									
		B C 🚊								
NASA [2 /1R IOA [3 /3] [F]] [NA]	[F] [P] [NA]	[X] *							
COMPARE [N /N] [N]	[иј [иј	[и]							
RECOMMENDATIONS:	(If different	t from NASA)								
[3 /3] [NA]		[D] ADD/DELETE)							
* CIL RETENTION	RATIONALE: (If a	applicable) ADEQUATE INADEQUATE	[]							
REMARKS: FAILURE HAS NO EFFECT. THE CHECK VALVE CANNOT PROTECT AGAINST AN UPSTREAM LEAK. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.										

ASSESSME ASSESSME NASA FME	NT I		2/03/3 MPS-3 0207-	141				N	NASA DATA BASELINE NEW	E []
SUBSYSTEMDAC ID:	M:		MPS 3141 ENGIN								0;7,45)
LEAD ANA	LYST	:	M.L.M	CNE	ELY						
ASSESSME	NT:										
,		ICAL LIGH			REDUN	DANCY	SCRI	EENS		CII	
	HD	W/FU	NC		A	В	•	C	2		
NASA IOA		/3 /2R		[NA] P]	[N [P	[A]	[] []	NA] P]	[] *
COMPARE	[/N]	[N]	[N]	[]	1]	[]
RECOMMEN	DATI	ons:	(If	di	ffere	nt fr	om Ni	ASA)			
-	[/]	[]	[]	[] (2	[ADD/E] ELETE)
* CIL RE	TENT	ION	RATION	ALE	: (If	appl	icab		ADEQUATE	[]
REMARKS: LAUNCH S REF: RI		-	EA/CIL	RE	VIEW	MEETI	NG NO		ADEQUATE	Ī]

ASSESSMENT DA ASSESSMENT II NASA FMEA #:): M	MPS-3150)		NASA DATA: BASELINE [] NEW [X]					
SUBSYSTEM: MDAC ID: ITEM: (LV59,61,63)	3	MPS 3150 ENGINE H	NLET	VALVE						
LEAD ANALYST	: M	M.L.MCNE	ELY							
ASSESSMENT:									e essenti	
1 21	TCUM	ry						CIL		
HD	V/FUNC	C	A	I	3	c	2	TIEF	1	
NASA [1 IOA [2	/1] /2]] [NA]	[]	NA] NA]	[N	IA] IA]	[X]] *	
COMPARE [N	/N]) (3	[]	[]	[]	
RECOMMENDATIO	ONS:	(If di	fferent	: fı	rom NA	SA)				
-		1 [) (AI	[DD/DI] ELETE)	
* CIL RETENT			-			INA	DEQUATE	į	•	
REMARKS: INTERCONNECT IN VALVE MAY NEED TO BE OPENED DURING ASCENT DUE TO A FAILURE IN AN ENGINE HELIUM SYSTEM. FAILURE WILL CAUSE AN ENGINE TO SHUTDOWN DUE TO LACK OF HELIUM PURGE. LOSS OF MISSION. NSTS 22206 2.3.3L REQUIRES ASSIGNMENT OF 3/1R. REF: RI/NASA CIL OF 12-23-87.										

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-3151	NASA DATA BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM: (LV59,61,63)	3151	SUPPLY INTERCONNECT I	NLET VALVE
LEAD ANALYST:	M.L.MCNEELY		
ASSESSMENT:			
CRITICAL FLIGH	ITY REDUND	DANCY SCREENS	CIL ITEM
HDW/FU		В С	114.
NASA [3 /1R IOA [3 /3] [P]] [NA]	[F] [P] [NA] [NA]	[X] * []
COMPARE [/N] [N]	[и] [и]	[N]
RECOMMENDATIONS:	(If differen	nt from NASA)	
[3 /3] [NA]	[NA] [NA] (A	[DD/DELETE)
* CIL RETENTION	RATIONALE: (If	applicable) ADEQUATE INADEQUATE	
		LVE HAS NO REDUNDANCY. AND RI/NASA FMEA/CIL R	

ASSESSMENT DATE: 2/04/88 ASSESSMENT ID: MPS-3152 NASA FMEA #: 0260-3						NASA DATA: BASELINE [] NEW [X]] . :			
SUBSYSTIMDAC ID ITEM: (LV59,6)	:		MPS 3152 ENGINE	2 H	ΙΕΙ	JUM.	SUI	PPI	ĽΥ	INTE	RC(ONNECT				VALVE
LEAD AN	ALYST	:	M.L.MC	CNE	EEI	Ϋ́										
ASSESSM	ENT:		•											-		
		ICAL: LIGH:	ITY I		RE	DUN	DAN	CY	SC	REEN	S	·		CII ITI		
	HD	W/FUI	NC					В			С					
NASA IOA	[3 [3	/1R /3]	[P NA]]	F NA]]	P NA] A]		[]	K]*
COMPARE	[/N	J	[N]	ָּן	N]	Ţ	N] .		[]	V]
RECOMME	NDATI	ons:	(If	di	lff	ere	nt i	fro	m	nasa)					
	[1	/1]	[NA	7]	[N?	\]	[N.			[D/I] LETE)
* CIL R		ION 1	RATIONA	\L E	E:	(If	apı	pli	Lca		ΑÏ	DEQUAT DEQUAT		[[N. s	j]
REMARKS POSSIBLE COMBINE REF: R NOTES.	E OVE	H 02	60-4.						·							BE MEETING

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-3152A	NASA DATA: BASELINE [] NEW [X]					
SUBSYSTEM: MDAC ID: ITEM: (LV59,61,63)	MPS 3152 ENGINE HELIUM SU	NLET VALVE					
LEAD ANALYST:	M.L.MCNEELY	••					
ASSESSMENT:							
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM							
HDW/FU	_	в с	TIEM				
NASA [1 /1 IOA [3 /3] [NA] [] [NA] [[NA] [NA] [NA]	[X] *				
COMPARE [N /N] [] [. 1 []	[N]				
RECOMMENDATIONS:	(If different	from NASA)					
. [/] [] [[] [] (A)	[] DD/DELETE)				
* CIL RETENTION :	RATIONALE: (If ag	oplicable) ADEQUATE INADEQUATE					
	L OF 12-23-87 AND	RI/NASA FMEA/CIL R	EVIEW MEETING				

ASSESSMI ASSESSMI NASA FMI	ENT I	D:		160	NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEMDAC ID: ITEM: (LV60,62	:		MPS 3160 ENGIN	Е НЕ	ELIUM	SUPI	bra i	NTER	CONNECT		ET VA	
LEAD ANA	LYST	:	M.L.M	CNE	ELY							
ASSESSMI	ENT:											-
		ICAL LIGH	ITY	I	REDUN	DANC	SCR	REENS	3	CII ITI		
		market for the Control of the	NC	7	A	I	3		C			
NASA IOA	[3	/3 /3]	[]	NA] NA]		NA] NA]		NA] NA]	[] *	
COMPARE	Ţ	/	3	[]	[]	[1	[]	
RECOMME	ITADN	ons:	(If	di	ffere	nt fi	rom N	IASA)				
-	[/]	[1	[]	[]	[(ADD/I] DELET	E)
* CIL R		ION	RATION	ALE	: (If	app.	licak		ADEQUAT IADEQUAT	E []	-
REMARKS THE RI/I RATIONAL REF: R	NASA LE IS	AVA	YSIS I ILABLE EA/CIL	ANI	D IOA	DOE	ron z	CAGE	REE.	SUPPO	ORTIN	G

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/04/88 MPS-3161 0262-5		NASA DATA: BASELINE [] NEW [X]				
SUBSYSTEM: MDAC ID: ITEM: (LV60,62,64)	MPS 3161 ENGINE HE	LIUM SUPPLY	INTERCONNECT	OUTLET VALVE			
LEAD ANALYST:	M.L.MCNEE	LY					
ASSESSMENT:							
CRITICAL FLIGH	T	EDUNDANCY S		CIL ITEM			
HDW/FU	nc a	В	С				
NASA [3 /3 IOA [3 /3] [N	[NA] [NA]		[] *			
COMPARE [/	1 [] []	[]	[]			
RECOMMENDATIONS:	(If dif	ferent from	NASA)				
[/] [] []		[ADD/DELETE)			
* CIL RETENTION	RATIONALE:	(If applic	able) ADEQUATE INADEQUATE				
REMARKS: REF: RI/NASA FM	EA/CIL REV	IEW MEETING	NOTES.				

ASSESSMI ASSESSMI NASA FMI	ENT	ID:	MPS-	-3162		NASA DATA: BASELINE [] NEW [X]						
SUBSYSTE MDAC ID: ITEM: (LV60,62			3162	? (NE H	ELIUN	4 SU	PPLY	INTE	RCONNECT	OUT		/ALVE
LEAD ANA	ALYS	T:	M.L.	MCNE	ELY							
ASSESSMI	ENT:									± . *	t sp	
		TICAL FLIGH DW/FU	T			IDAN(CY S	CREEN	5		IL TEM	
NASA IOA		•				[_	[NA] NA]	[х ј х ј	*
COMPARE	[]	N /N]	[]	[]	[1	[N]	
RECOMMEN	IDAT	ions:	()	f di	ffere	ent :	from	NASA)			
-	(1 /1]	[]	NÀ]	[NA]	[A] /DELE	TE)
* CIL RE		TION	RATIC	NALE	: (If	ap)	plica	able) Il	ADEQUAT	E []	
REMARKS: RI/NASA OVERPRES REF: RI	IND SSUR	IZATI	ON.					1000	71000			V 1587 2 .

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/04/88 MPS-3162A 0262-4	NASA DATA: BASELINE [] NEW [X]					
SUBSYSTEM: MDAC ID: ITEM: (LV60,62,64)	MPS 3162 ENGINE HELIUM	OUTLET VALVE					
LEAD ANALYST:	M.L.MCNEELY						
ASSESSMENT:							
CRITICAL FLIGH HDW/FU	T	DANCY SCREENS B C	CIL ITEM				
NASA [2 /1R IOA [2 /2	. j [P]	[F] [P] [NA]	[X] *				
COMPARE [/N] []]	[и] [и]	[]				
RECOMMENDATIONS:	(If differe	nt from NASA)					
[1 /1] [NA]	[AN] [AN] (AN)	[] ADD/DELETE)				
* CIL RETENTION REMARKS:	·	applicable) ADEQUATE INADEQUATE	[]				
POSSIBLE OVERPRE		MEETING NOTES.					

ASSESSMI ASSESSMI NASA FMI	ENT	ID:	2/04/ MPS-3 0262-	3162B		NASA DATA: BASELINE [] NEW [X]						
SUBSYSTI MDAC ID: ITEM: (LV60,62	•		MPS 3162 ENGIN	VE HE	LIUM	SUPP	LY	INTERCO		OUTL		
LEAD AND	ALYS	T:	M.L.	CNEE	LY							
ASSESSMI	ENT:											
		FLIGH	ITY T NC			DANCY B		CREENS		CI:		
NASA IOA		·]			[N.	A] A]	[NA [NA]	[]	X] X]	*
COMPARE	[N /N]	[]	[]	Γ]	[]	
RECOMMEN	TAGE	ions:	(Ii	f dif	fere	nt fr	om	NASA)				
-	[/]	[]	[]	ί]	[(ADD/1) DELE	ETE)
* CIL RI		TION	RATION	NALE:	(If	appl	ica		EQUATI EQUATI] 3]	
	-	SA FM	EA/CII	REV	IEW	MEETI	NG	NOTES.				

ASSESSMENT ID: NASA FMEA #:	MPS-3170			BASELINE NEW					
MDAC ID:		170 NGINE HELIUM INTERCONNECT CHECK VALVE-P							
LEAD ANALYST:	M.L.MCNE	ELY							
ASSESSMENT:									
CRITICAL FLIGH		REDUNDAN	ICY SCREE	ns	CIL ITEM				
HDW/FU		. A B C							
NASA [2 /1R IOA [3 /3] [P] [NA] [F] NA]	[P] [NA]	[X] *				
COMPARE [N /N] []	и] [[א]	[N]	[14]				
RECOMMENDATIONS:	(If di	fferent	from NAS	A)					
[3 /3] []	NA] [NA]		[D] DD/DELETE)				
* CIL RETENTION	RATIONALE	: (If ap	plicable						
				ADEQUATE INADEQUATE	• •				
REMARKS: FAILURE WILL HAVE NO EFFECT. REF: RI/NASA OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.									

ASSESSME ASSESSME NASA FME	ENT I	D:		L71					NASA DAT BASELIN NE		x]
SUBSYSTE MDAC ID: ITEM: OUTLET (3 H	ELIUM	INT	ERCONN	IEC1	CHECK V		-PANEL
LEAD ANA	LYSI	?:	M.L.M	CNE	ELY						
ASSESSME	ENT:										
	F	'LIGH'	_			ANC	EY SCRE	eens	c c	CI IT	L EM
NASA IOA	[3 [3	/3]	[NA] NA]	[NA]	[NA] NA]	[]*,
COMPARE	[/]	[]	[]	[]	ľ]
RECOMMEN	IDATI	ONS:	(If	di	fferer	it i	from NA	SA))		
	[/]	[]	(1	[] (] DELETE)
* CIL RE	.					_		Il	ADEQUATE NADEQUATE]
REF: RI	I/NAS	SA FM	EA/CIL	RE	VIEW M	EE.	ring no	TES	5.	+	

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-3180 0259-2			BASELINE NEW	
MDAC ID:		ELIUM INTI	ERCONNECI	CHECK VAI	LVE-PANEL
LEAD ANALYST:	M.L.MCNEE	ELY			
ASSESSMENT:					
CRITICAL FLIGH	ITY F	REDUNDANC	Y SCREENS	5	CIL ITEM
_		A 1	В	С	
NASA [2 /1R IOA [3 /3] [N	P] [] NA] []	F] [NA] [P] NA]	[X] * []
COMPARE [N /N] []	4] [1	и] [N]	[и]
RECOMMENDATIONS:	(If dif	fferent f	rom NASA)		
[3 /3) [)	NA) [I	NA] [[D] DD/DELETE)
* CIL RETENTION	RATIONALE:	: (If app	~	ADEQUATE	[]
REMARKS: FAILURE WILL HAV REF: RI/NASA CI NOTES.					

ASSESSMENT D ASSESSMENT I NASA FMEA #:	D:	2/04/8 MPS-31 0259-1	181					NASA DA' BASELII NI		
SUBSYSTEM: MDAC ID: ITEM: INLET (CV27,			з неі	LIUM	INTE	RCONNI	EC!	г снеск	VALVE-	PANEL
LEAD ANALYST	':	M.L.M	CNEE	ĽΥ						
ASSESSMENT:			-							ang spareng re
The state of the s	ICAL LIGH	-			ANCY	SCREI	ENS	5	CIL	
HD	W/FUI	NC	A		E	3		C		
NASA [3 IOA [2	/3 /2]	[N2	A] A]	[]	IA] IA]	[[NA] NA]	[[x] .*
COMPARE [N	/N]	[]	[ر ا	[]	[N] .
RECOMMENDATI	ons:	(If	difi	feren	t fr	om NAS	SA))		
. [/]	[] .	[1	[3	[(ADD/D] ELETE)
* CIL RETENT	ION 1	RATIONA	ALE:	(If	appl	icable.		ADEQUATI	E []
REMARKS: REF: RI/NAS	A FM	EA/CIL	REV]	IEW M	EETI	NG NOT	res	S .		·

ASSESSME ASSESSME NASA FME	NT I	D:	MPS-	3190)	NASA DATA: BASELINE [] NEW [X]								
SUBSYSTE MDAC ID: ITEM: (PD14)			MPS 3190 MAIN							RB H	[AL]	F)		
LEAD ANA	LYSI	r:	M.L.	MCNE	ELY									
ASSESSME	NT:													
		ricai Fligh	ITY T		REDU	JNDAI	NCY	SCI	REEN	S		CII	_	
	HI	OW/FU	NC		A		B	}		С				
NASA IOA	[3	3 /3]]	NA] NA]		[N [N	A]	[NA] NA]		[]	*
COMPARE	[/]	[]		[]	ι]		[]	
RECOMMEN	DAT]	ONS:	(I:	f di	ffeı	rent	fr	om 1	NASA)				
-	[/]	[]		[]	[]	(A	[.DD/D] ELI	ETE)
* CIL RE	TENI	NOI	RATIO	NALE	: (1	[f a]	ppl	ical	ble)			_	_	
									I	ADEQUA NADEQUA		[]	
REMARKS: THIS FAI DUPLICAT	LURE								HEET	4660 2	AND	4666		THIS

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/04/88 MPS-3200 NA)		NASA DATA: BASELIÑE NEW	[x]			
MDAC ID:	MPS 3200 FACILITY							
LEAD ANALYST:	M.L.MCNE	EELY						
ASSESSMENT:								
CRITICAL: FLIGHT	CIL							
HDW/FUI		A	B	C				
NASA [/ IOA [2 /2] [na]	[NA]	[] [NA]	[X]			
COMPARE [N /N] [N]	[N]	[и]	[N]			
RECOMMENDATIONS:	(If di	ifferent	from NAS	A)				
[/] []	[]	[] (AD	[] DD/DELETE)			
* CIL RETENTION	RATIONALE	E: (If a) ADEQUATE INADEQUATE	[] : 4			
REMARKS: THIS FAILURE IS RI/NASA 0235-1).	COVERED (JNDER LE	AKAGE OF	THE LINE (IC	A 443,			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/04/88 MPS-4010 0202-1)		NASA DATA: BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM:	MPS 4010 PNEU VAI	LVE HE SUP	PLY CHECK	K VALVE (CV	74)
LEAD ANALYST:	A.J.MAR	INO			
ASSESSMENT:					
DT TAIN	m	REDUNDANC	Y SCREENS	5	CIL ITEM
HDW/FU	NC	A	В	С	
NASA [3 /1R IOA [3 /2R] [P] [P] [F] [P] [F] P]	[X] * []
COMPARE [/N] [] [и][и	n]	[14]
RECOMMENDATIONS:	(If di	ifferent f	rom NASA))	
[3 /1R] [P] [P] [P] (AD	[D] DD/DELETE)
* CIL RETENTION	RATIONALI	E: (If app		ADEQUATE NADEQUATE	
REMARKS: SECOND FAILURE (PNEUMATIC ACCUMU THE CORSSOVER VA OPERATIONS. FAI WILL DEPLETE ENG IMPOSSIBLE. REL BUT VENTING HYDR REF: RI/NASA CI NOTES.	LATORS WILL LURE OF A INE HELITORE SYSTEM OF A LONGEN IS A LONGEN	ILL RETAIN PROVIDE H ANOTHER HE UM SUPPLIE EM WILL PR A FIRE HAZ	PRESSURI ELIUM FOR ELIUM SUPI ES AND VAI ROTECT AGE EARD DURIN	E TO CLOSE R SUBSEQUEN PLY CHECK V LVE OPERATI AINST MANIF NG ENTRY/L	PREVALVES. IT VALVE VALVE CONS WILL BE FOLD RUPTURE, ANDING.

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			MP				NASA DATA: BASELINE [] NEW [X]											
SUBSYSTE MDAC ID: ITEM:				MP 40 PN	11	/A]	LVI	е ні	s st	JPF	ry (СНЕСІ	χ τ	/AL	VE (C	CV4)		
LEAD ANA	LYS	T	•	A.	J.M	AR:	INC)										
ASSESSME	NT:																	
		FI	CAL LIGH V/FU	T			RI A	EDUI	MADI	ICY E		REENS	s c			CI:	-	
						_			_			_				_	_	-
NASA IOA	[3	/3]		[NA P	\]	[F	[A]	[NA P	\]		[]	*
COMPARE	[/]		[N]	[N]	[N]		[]	
RECOMMEN	DAT	'IC	ons:		(If	đ.	ifi	fere	ent	fr	om l	NASA))					
	[/]		[]	(•	3	[]	· (2	[\DD/1] DELE	TE)
* CIL RE		T.	CON	RAT	IONA	λLI	€:	(II	f ap	pl	ical		ΑI		UATE UATE]	
REF: RI	/NA	S	A FM	EA/	CIL	RI	EV3	EW	MEE	TI	NG 1	NOTES	5.					

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ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4020	NASA DATA BASELINE NEW	
MDAC ID:	MPS 4020 PNEU VALVE HE RE	G OUTLET CHECK VALV	E (CV8)
LEAD ANALYST:	A.J.MARINO		
ASSESSMENT:			
CRITICAL FLIGH	ITY REDUNDAN	CY SCREENS	CIL ITEM
	NC A	В С	
NASA [3 /1R IOA [3 /1R	[P] [P] [F] [P] P] [P]	[X] * []
COMPARE [/] [][иј [ј	[N]
RECOMMENDATIONS:	(If different	from NASA)	
[3 /1R	e] [P] [P] [P] (A	[D] DD/DELETE)
* CIL RETENTION	RATIONALE: (If ap	plicable) ADEQUATE INADEQUATE	[]
FAILURES (CV8, C AND INABILITY TO	CV9, CV4, PD8) WIL CLOSE PREVALVES.	ORTS PASSAGE OF SCR L CAUSE LOSS OF PNE	EEN B. FOUR UMATIC HELIUM

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4021	NASA DA' BASELII N	
	MPS 4021 PNEU VALVE HE	ISOLATION CHECK VAL	VE (CV8)
LEAD ANALYST:	A.J.MARINO		
ASSESSMENT:			
CRITICAL: FLIGH	ITY REDUNDA	ANCY SCREENS	CIL ITEM
HDW/FU	-	B C ::	
NASA [3 /1R IOA [2 /1R] [P]] [P]	[F] [P] [P] [P]	[X] *
COMPARE [N /] []	[и] [и]	[]
RECOMMENDATIONS:	(If differen	t from NASA)	
[2 /1R] _. [P]	[P] [P]	[(ADD/DELETE)
* CIL RETENTION	RATIONALE: (If	applicable) ADEQUATI INADEQUATI	
VENTING HYDROGEN REF: RI/NASA CI	WILL CREATE A	ENT VALVE OPERATIONS FIRE HAZARD DURING TO THE NOTE OF	FOR DUMP.

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4021A	NASA DA: BASELII NI					
MDAC ID:	MPS 4021 PNEU VALVE HE I	SOLATION CHECK VALV	VE (CV8)				
LEAD ANALYST:	A.J.MARINO						
ASSESSMENT:							
CRITICAL FLIGH		ANCY SCREENS	CIL ITEM				
HDW/FU	NC A	В С					
NASA [1 /1 IOA [2 /1R] [NA]] [P]	[NA] [NA] [P]	[X] * [X]				
COMPARE [N /N] [N]	[N] [N]	[]				
RECOMMENDATIONS:	(If different	from NASA)					
[/	1 []		[] (ADD/DELETE)				
* CIL RETENTION	* CIL RETENTION RATIONALE: (If applicable)						
DEWLDUC.		ADEQUATI INADEQUATI					
REMARKS: POSSIBLE OVERPRE REF: RI/NASA CI NOTES.		ID RI/NASA FMEA/CIL	REVIEW MEETING				

ASSESSMENT DATE: 2/0 ASSESSMENT ID: MPS NASA FMEA #: 020	04/88 S-4030 09-1	NASA DATA BASELINE NEW			
SUBSYSTEM: MPS MDAC ID: 403	s 30	ATION CHECK VALVE	(CV9)		
LEAD ANALYST: A.S	J.MARINO				
ASSESSMENT:					
FLIGHT	REDUNDANCY		CIL ITEM		
HDW/FUNC	A B	C			
NASA [2 /1R] IOA [2 /1R]	[P] [F [P] [F	[P] [P]	[X] * [X]		
COMPARE [/]	[] [] []	[]		
RECOMMENDATIONS:	(If different fr	om NASA)			
[3/3]	[NA] [N.	[NA] (A	[] DD/DELETE)		
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []					
REMARKS:		INADEQUALE	t j		
ACCUMULATORS WILL ST					
ABLE TO OPEN PREVAL					
OTHER HELIUM PREVALV					
OTHER HELIUM LEG, SO DUE TO PREVALVE INO	PERABILITY BUT	RELIEF SYSTEM AND	INERTING		
WILL PROTECT AGAINST	T MANIFOLD RUPTU	RE. NO REDUNDANC	Υ.		

REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-403		NASA DATA: BASELINE NEW			
	MPS 4030 PNEU VA	LVE HE ISOLATION	CHECK VALVE	(CV9)		
LEAD ANALYST:	A.J.MAR	INO				
ASSESSMENT:						
CRITICAL FLIGH		REDUNDANCY SCREE	ns	CIL ITEM		
HDW/FU	NC	A B	С			
NASA [1 /1 IOA [2 /1R] [NA] [NA] P] [F]	[NA] [P]	[X] *		
COMPARE [N /N] [и] [и]	[и]	[]		
RECOMMENDATIONS:	(If d	ifferent from NAS	A)			
[/] [] []	[] (AI	[] DD/DELETE)		
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE [] REMARKS:						
POSSIBLE OVERPRE REF: RI/NASA CI NOTES.		ION. 23-87 AND RI/NASA	FMEA/CIL RI	EVIEW MEETING		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4031		NASA DATA: BASELINE NEW	
MDAC ID:	MPS 4031 PNEU VALVE HE	ISOLATION (CHECK VALVE	(CV9)
LEAD ANALYST:	A.J.MARINO			
ASSESSMENT:	. •			
CRITICAL FLIGH	ITY REDUND	ANCY SCREE	NS	CIL ITEM
HDW/FU	NC A	В	C - 44, 4	
	[P] [P]			[X] *
COMPARE [N /N] []	[N]	[]	[N]
RECOMMENDATIONS:	(If differen	t from NASA	A)	
[3 /1R] [P]	[P]	[P] (AI	[D] DD/DELETE)
* CIL RETENTION	RATIONALE: (If) ADEQUATE INADEQUATE	[]
REMARKS: FAILURE OF CV8 A FAILURE WILL ALL REF: RI/NASA CI NOTES.	OW PNEUMATIC PR	n closed ii Essure to i	N ADDITION T	CO CV9 naum

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4040		NASA DATA BASELINE NEW		
MDAC ID:	MPS 4040 GO2 PRESS MAN				
LEAD ANALYST:	A.J.MARINO				
ASSESSMENT:					
CRITICAL FLIGH		DANCY SCREEN	1 S	CIL ITEM	
	NC A	В .	С	TIEM	
NASA [2 /1R IOA [3 /3	[P]] [NA]	[F] [NA]	[P] [NA]	[X] *	
COMPARE [N /N] [N]	[N]	[N]	[N]	
RECOMMENDATIONS:	(If differe	nt from NAS	A)		
[3 /3	.] [NA]	[NA]	[NA] (A	[D] DD/DELETE)	
* CIL RETENTION	RATIONALE: (If		ADEQUATE INADEQUATE		
REMARKS: LINE RUPTURE IS REF: RI/NASA CI NOTES.				EVIEW MEETING	

ASSESSMENT DATE: 2/04/88 ASSESSMENT ID: MPS-4040A NASA FMEA #: 0631-3			NASA DATA: BASELINE [] NEW [X]				
SUBSYSTEM: MDAC ID: ITEM:	MPS 4040 GO2 PRESS	MANII	REPRESS	CHECK VALVE	E (CV10)		
LEAD ANALYST:	A.J.MARIN	10					
ASSESSMENT:							
CRITICAL FLIGH	T		ANCY SCRE	ENS C	CIL ITEM		
HDW/FU	INC A	A	Б				
NASA [3 /3 IOA [3 /3] []	NA] NA]	[NA] [NA]	[NA] [NA]	. []*		
COMPARE [/] [)	[]	[]	[]		
RECOMMENDATIONS:	(If di	fferent	from NA	SA)			
(/] []	[]	[]	[] ADD/DELETE)		
* CIL RETENTION REMARKS:				ADEQUATE INADEQUATE			
REF: RI/NASA FM	IEA/CIL REV	TEM WI	SETING NO	TES.			

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ASSESSMI ASSESSMI NASA FMI		2/04/8 MPS-40 0631-1	041	NASA DATA: BASELINE [NEW [
SUBSYSTI MDAC ID: ITEM:	;	MPS 4041 GO2 PF	ress man	IF REPRES	S CHECK VAL	VE (CV10)	
LEAD ANALYST: A.J.MARINO							
ASSESSMI	ENT:						
	CRITICAL FLIGH	T		DANCY SCR		CIL ITEM	
	HDW/FU		A	В	С		
NASA IOA	[3 /3 [3 /3]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[] *	
COMPARE	[/	1	[]	[]	[]	[]	
RECOMMEN	NDATIONS:	(If	differe	nt from N	ASA)		
	[/	1	[]	[]	[]	[] (ADD/DELETE)	
REMARKS:	1		•	applicab MEETING N	ADEQUATI INADEQUATI		
True Ka	MUDDU LE	me/ cit	VRATEM :	urering N	OITO.		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			7 [X]		
SUBSYSTEM: MDAC ID: ITEM:	MPS 4050 LO2 FEED MANIF	REPRESS CHECK VALVE	(CV12)		
LEAD ANALYST:	ANALYST: A.J.MARINO				
ASSESSMENT:					
CRITICAL FLIGH	ITY REDUNDA	NCY SCREENS	CIL ITEM		
HDW/FU		В С	*		
NASA [2 /1R IOA [3 /3] [P]] [NA]	[F] [P] [NA]	[X] * []		
COMPARE [N /N] [N]	[N]	[N]		
RECOMMENDATIONS:	(If different	from NASA)			
[3 /3] [NA]	[NA] [NA] (A	[D] ADD/DELETE)		
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE []					
INADEQUATE [] REMARKS: LINE RUPTURE IS NOT VALID AS A LOSS OF REDUNDANCY. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.					

ASSESSMI ASSESSMI NASA FMI	ENT I	D:		4/88 -405(3-3)A	NASA DATA: BASELINE [] NEW [X]								
SUBSYSTEMDAC ID:			MPS 405 LO2	0	D MANI	F RE	PRESS	СНІ	ECK VAL	VE (cvi	L 2)		
LEAD AND	ALYSI	?:	A.J	.MAR	INO									
ASSESSMI	ENT:													
	F	ICAL LIGH	T		REDUN	IDANC	Y SCR	EENS			CII ITE			
•	HE	W/FU	NC		A		В		С					
NASA IOA	[3	/3]	[[NA] NA]]	NA] NA]	[NA] NA]		[[] *		
COMPARE	[/]	[]	[]	[]		[1		
RECOMMEN	NDATI	ons:	(If d	iffere	ent f	rom N	ASA))					
-	Ę	/	1	[]	[]	[]	(AD	[D/I] DELETE		
* CIL RI	:							I	ADEQUA NADEQUA		[]		
REF: R	I/NAS	SA FM	EA/C	IL R	EVIEW	MEET	'ING N	OTES	5.					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4051	MPS-4051 BASELINE []										
	MPS 4051 LO2 FEED MANIF											
LEAD ANALYST: A.J.MARINO												
ASSESSMENT:												
CRITICAL FLIGH	ITY REDUNDA	ANCY SCREENS	CIL ITEM									
	NC A	B C										
NASA [3 /1R IOA [1 /1] [P]] [NA]	[F] [P] [NA] [NA]	[X] *									
COMPARE [N /N] [N]	[N] [N]	[N]									
RECOMMENDATIONS:	(If different	t from NASA)										
[3 /3] [NA]		[D] ADD/DELETE)									
* CIL RETENTION	RATIONALE: (If	applicable) ADEQUATE TNA DEQUATE	[]									
INADEQUATE [] REMARKS: HELIUM PRESSURE IS NOT REQUIRED FOR DUMP. RELIEF SYSTEM AND INERTING WILL PROTECT AGAINST MANIFOLD RUPTURE. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.												

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/04/88 MPS-4060 NA	NASA DATA: BASELINE [] NEW [X]								
SUBSYSTEM: MDAC ID: ITEM:	MPS 4060 GH2 PRESS MANI	F REPRESS CHECK	VALVE (CV13)							
LEAD ANALYST:	A.J.MARINO									
ASSESSMENT:										
CRITICAL FLIGH	T	ANCY SCREENS	CIL ITEM							
HDW/FU	INC A	в с								
NASA [/ IOA [3 /3] []] [NA]	[] [] [NA] [NA]	[] *							
COMPARE [N /N] [N]	[и] [и]	[]							
RECOMMENDATIONS:	(If differen	t from NASA)								
[3 /3] [NA]	[NA] [NA]	[] (ADD/DELETE)							
* CIL RETENTION	RATIONALE: (If	ADE	QUATE [] QUATE []							
REMARKS:		2111102	araa f î							

ASSESSMI NASA FMI	ENT	II	D:		406							A DATA SELINE NEW	[
SUBSYSTI MDAC ID: ITEM:				MPS 406 GH2	50	ss	MANIF	R	EPRES	s ci	HECK	VALVE	(ଫ	V13)
LEAD AN	ALYS	ST	:	A.J	.MAR	INO	•							
ASSESSMI	ENT:	:												,
		F	ICAL LIGH N/FU			RE A	DUNDA		Y SCR B	EENS	s c	era er a de la	CII ITI	L EM
NASA IOA			•]	NA NA	.]	[]	NA] NA]	[[
COMPARE	[/]	[]	[]	[]		[]
RECOMME	radn	PI (ons:	(If d	iff	erent	f	rom N	ASA))			
	(/]	[]	[1	[]	(Al	[DD/1] DELETE)
* CIL RI	:									I	VADE	QUATE	[]
REF: R	I/N/	\S/	A FM	EA/C	CIL R	EVI	EW ME	ET	ING N	OTES	3.			

ASSESSMENT DATA ASSESSMENT ID: NASA FMEA #:	E: 2/04/88 MPS-4061 0605-1			NASA DATA BASELINI NEV	
SUBSYSTEM: MDAC ID: ITEM:	MPS 4061 GH2 PRESS	S MANIF	REPRESS	CHECK VALV	E (CV13)
LEAD ANALYST:	A.J.MARI	10			
ASSESSMENT:					
CRITIC FLI	GHT	REDUNDAN	CY SCRE	ENS C	CIL ITEM
HDW/	FUNC 2	4	Б	C	
NASA [3 / IOA [3 /	3] [1 3] [1	NA] [AN	NA] NA]	[NA] [NA]	[] *
COMPARE [/] [] []	[]	[]
RECOMMENDATION	S: (If di	fferent	from NA	SA)	
] [] [3	[]	[] ADD/DELETE
* CIL RETENTIO	N RATIONALE	: (If ap	plicabl	e) ADEQUATE INADEQUATE	
REMARKS: REF: RI/NASA	FMEA/CIL RE	VIEW MEE	TING NO	TES.	

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4070	NASA DATA: BASELINE [] NEW [X]										
MDAC ID:	MPS 4070 LH2 RECIRC MANIF	REPRESS CHECK VALVE	(CV14)									
LEAD ANALYST:	A.J.MARINO											
ASSESSMENT:			11 1 # 1									
CRITICAL: FLIGHT	CIL ITEM											
HDW/FU		B C (42) - 4										
NASA [2 /1R IOA [3 /3] [P] [] [NA] [F] [P] NA] [NA]	[X] *									
COMPARE [N /N] [N][и] [и]	[N]									
RECOMMENDATIONS:	(If different f	from NASA)										
[3 /3] [NA] [NA] [NA] (AD	[D] D/DELETE)									
* CIL RETENTION I	RATIONALE: (If app	olicable) ADEQUATE INADEQUATE	[]									
REMARKS: LINE RUPTURE IS I REF: RI/NASA CII NOTES.	NOT VALID AS LOSS L OF 12-23-87 AND	OF REDUNDANCY. RI/NASA FMEA/CIL RE	VIEW MEETING									

ASSESSMENT DA ASSESSMENT II NASA FMEA #:	, ,	070A		NASA DA' BASELII N		•
SUBSYSTEM: MDAC ID: ITEM:	MPS 4070 LH2 RI	ECIRC MAN	IF REPRE	SS CHECK VA	LVE (C	:V14)
LEAD ANALYST:	A.J.M	ARINO				
ASSESSMENT:						
	CALITY IGHT	REDUND	ANCY SCR	EENS	CII ITE	-
HDV	/FUNC	A	В	С		
NASA [3 IOA [3	/3] /3]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[] *
COMPARE [/]	[]	[]	[]	[]
RECOMMENDATIO	NS: (If	differen	t from N	ASA)		
	/ 1	[]	[]	[]	[(ADD/I] DELETE)
* CIL RETENT	ON RATION	ALE: (If	applicab	le) ADEQUAT INADEQUAT	-]
	FMEA/CIL	REVIEW M	EETING N	OTES.		

ASSESSMENT DATE:	2/04/88	NASA DATA: BASELINE []							
ASSESSMENT ID: NASA FMEA #:	2/04/88 MPS-4071 0632-1	NEW NEW	[x]						
SUBSYSTEM:	MPS	e e e e e e e e e e e e e e e e e e e							
MDAC ID:									
ITEM:	LH2 RECIRC MANIF	REPRESS CHECK VALVE	(CV14)						
LEAD ANALYST:	A.J.MARINO								
ASSESSMENT:									
	TY REDUNDANC	CY SCREENS	CIL						
FLIGHT HDW/FUN	IC A	B C	ITEM						
NASA [2 /1R IOA [3 /3] [P] [] [NA] [F] [P] NA]	[X] *						
COMPARE [N /N] [N] [иј [иј	[N]						
RECOMMENDATIONS:	(If different	from NASA)							
[3 /3] [NA] [NA] [NA] (AE	[D] DD/DELETE)						
* CIL RETENTION F	RATIONALE: (If app	olicable)	··· <u>-</u> ···-						
		ADEQUATE INADEQUATE	[]						
REMARKS: RELIEF VALVE RV7 HAS NO EFFECT.	IS NOT REDUNDANT	TO THE CHECK VALVE.	FAILURE						
	L OF 12-23-87 AND	RI/NASA FMEA/CIL RE	VIEW MEETING						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DAT BASELIN NE								
SUBSYSTEM: MDAC ID: ITEM:	MPS 4080 LH2 FEED MANIF									
LEAD ANALYST:	A.J.MARINO									
ASSESSMENT:										
CRITICAL FLIGH HDW/FU		ANCY SCREENS B C	CIL ITEM							
NASA [2 /1R IOA [3 /3] [P]] [NA]	[F] [P] [NA] [NA]	[X] * []							
COMPARE [N /N] [N]	[и] [и]	[и]							
RECOMMENDATIONS:	(If different	t from NASA)								
[3 /3] [NA]		[D] ADD/DELETE)							
* CIL RETENTION	RATIONALE: (If a	applicable) ADEQUATE INADEQUATE								
NO EFFECT.		LOSS OF REDUNDANCY. ND RI/NASA FMEA/CIL&								

ASSESSMENT DATE: 2/05/88 ASSESSMENT ID: MPS-4080A NASA FMEA #: 0630-3									NASA DATA: BASELINE [] NEW [X]						
SUBSYST MDAC ID ITEM:				MPS 4080 LH2 FF	EEL	MANIE	, N	om	RE	PRESS	СНЕСК	VALV	E (CV15)		
LEAD AN	ALYS	T:		A.J.M	RI	INO									
ASSESSM	ENT:														
		FL	CALI IGH /FUI	_		REDUNI	OAN	CY B	sc	REENS	c		IL TEM		
NASA			•		ſ		ſ		A 1	r	-	г	1 *		
IOA	. [3	/3]	[NA]	į	NZ	A]	į	NA]	[j		
COMPARE	(/]	[3	[]	[]	[]		
RECOMME	:NDAT	'IO	ns:	(If	đi	ifferer	nt	fr	om	nasa)					
-	τ		/]	[1	[]	. [1] /DELETE)		
* CIL F	i :					er : :				IN	ADEQUA IADEQUA	TE []		
REF: F	RI/NA	\SA	FM	EA/CIL	RI	EVIEW N	ÆE	TI	NG	NOTES	• 4 , 4.				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4081		ATA: INE [] IEW [X]							
SUBSYSTEM: MDAC ID: ITEM:	MPS 4081 LH2 FEED MANIF	NOM REPRESS CHECK	VALVE (CV15)							
LEAD ANALYST:	A.J.MARINO									
ASSESSMENT:										
CRITICAL FLIGH	LITY REDUNE	DANCY SCREENS	CIL ITEM							
	INC A	в с	IIE							
NASA [2 /1R IOA [3 /3	[P]] [NA]	[F] [P] [NA] [NA]	[X] * []							
COMPARE [N /N] [N]	[и] [и]	[и]							
RECOMMENDATIONS:	(If differen	nt from NASA)								
[3 /3] [NA]	[NA] [NA]	[D] (ADD/DELETE)							
* CIL RETENTION	RATIONALE: (If	applicable) ADEQUATION INADEQUATION ADEQUATION ADEQUATI								
SYSTEM WILL PROT	ECT AGAINST MAN	LL CLEAR REMAINING WIFOLD RUPTURE. NO AND RI/NASA FMEA/CII	REDUNDANCY.							

ASSESSM ASSESSM NASA FM	ENT :	ID:	MPS-40								BASELIN NE					
SUBSYST MDAC ID ITEM:			MPS 4090 LO2 TA	NK	(P)	RE-P	RES	ss	CH	ECK '	VAI	LVE (CV	16)			
LEAD AN	ALYS'	T:	A.J.M	RI	NO											
ASSESSM	ENT:														,s=1-	
		FLIGH'			RE: A		ANC	CY B	SC	REENS	s c			IL FEI	4	
NASA IOA	[/ 2 /1R]	[P]	[P]	[P]	[x]	*
COMPARE	[:	N /N	1	[N]	[N]	[N]	[N]	
RECOMME	NDAT:	ions:	(If	di	ff	eren	it 1	fro	om 1	NASA)					
	[/	1	[]	[]	[] (2	[ADD,	/DI] ELI	ETE)
* CIL R			RATIONA	LE	:	(If	app	91 3	ica!		AI	DEQUATE DEQUATE	[- ·]	
REMARKS THIS IT DUPLICA	EM I	S ANA		N	10	A 10	11-	-10	14	AND	RI	I/NASA (0518	В.	I	DELETE

ASSESSME ASSESSME NASA FME																	
SUBSYSTEM: MPS MDAC ID: 4091 ITEM: LO2 TANK PRE-								PRE	SS	СН	ECK 1	VA]	LVE (CV1	6)		
LEAD ANALYST: A.J.MARINO																	
ASSESSME	NT	:															
CRITICALITY REDUNDANCY SCREENS CIL ITEM																	
FLIGHT HDW/FUNC									В			С			TTE	M	
NASA IOA	[[3	/3]]	N2]	[N2]	[N2] A]		[]	*
COMPARE	[N	/N]	[N]	[N]	[N]		[]	
RECOMMEN	DA'	rI	ons:	(If d	if	fere	ent :	fro	om i	nasa))					
-	[/]	[]	[]	[]	(A	[DD/D:	EL:	ETE)
* CIL RE	TE)	NT:	ION	RATI	ONALI	€:	(If	ap)	pl:	Lca	•		DEQU <i>I</i> DEQU <i>I</i>		[]	
REMARKS: THIS ITE					D ON	I	DA 1	011	-10)14	AND	R	I/NAS	A O	518.]	DELETE

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/05/88 MPS-4100 NA		DATA: ELINE [] NEW [X]
	MPS 4100 LH2 TANK PRE-	-PRESS CHECK VALVE	(CV17)
LEAD ANALYST:			
ASSESSMENT:			
CRITICAL		NDANCY SCREENS	CIL ITEM
FLIGHT HDW/FUI		в с	I I EM
NASA [/ IOA [2 /1R		[P] [P]	[x] *
COMPARE [N /N] [N]	[N] [N]	[N]
RECOMMENDATIONS:	(If differe	ent from NASA)	
[/	1 [,1	,.[] , []	[] (ADD/DELETE)
* CIL RETENTION I	RATIONALE: (I		JATE []
REMARKS: THIS ITEM IS ANAL DUPLICATE ANALYS		2181-2183 AND RI/N	ASA 0502. DELETE

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		PS-4101 BASELINE []											
SUBSYSTEM: MDAC ID: ITEM:	MPS 4101 LH2 TAN	K PRE-PRESS	CHECK VALVE (DV1	7)									
LEAD ANALYST: A.J.MARINO													
ASSESSMENT:													
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM													
HDW/FU		A B	C										
NASA [/ IOA [3 /3] [] [NA] [N] [] A] [NA]	[] *									
COMPARE [N /N] [и] [и] [N]	[]									
RECOMMENDATIONS:	(If d	ifferent fr	om NASA)										
] [] [] [] (A	[] .DD/DELETE)									
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE []													
REMARKS:	AV	703 0101 0	INADEQUATE	. ,									
THIS ITEM IS ANA		TOA 2181-2	183 AND RI/NASA 0	DELETE									

NASA FMEA #: SUBSYSTEM:				MPS NA MPS 411	-411 0	0	MAN'	T FO	מ.ז	REPE	PES!	NASA D BASEL	INE NEW	Ĭ ()	·
LEAD ANA	LY	ST		A.J			ar ar ar a	•.• <u>·</u>							1 ii 21
ASSESSME	NT	:												· . · · · ·	1 12.4 1 12.4
. 112	: ::	F	LIGH	ITY T NC		RE A	DUNI	DAN	CY B	SCRE	EENS	s c		CII	
NASA IOA	[3	/3]	[NA]	[NA]	[] NA]		[] *]
COMPARE	. [N	/N]	[N]	[N]	[n]		[]
RECOMMEN	DA'	TI	ons:	(:	If d	iff	erei	nt	fro	m NA	SA)			
	[3	/3]	[NA]	[NA	.]	• [NA]	(AI	[DD/I] ELETE)
* CIL RE	TE	NT:	ION	RATI(ONAL	E:	(If	ap	pli	cabl		ADEQUA NADEQUA		[]

ASSESSMEN ASSESSMEN NASA FMEA	T ID:	2/05/88 MPS-41: 0605-3			NASA DATA: BASELINE [NEW [X							
SUBSYSTEM MDAC ID:		MPS 4110 GH2 PR	ESS	MANIF	OLD	REPRI	ESS	снеск	VALVE	(CV24)		
LEAD ANAI	LYST:	A.J.MA	RINC)								
ASSESSMEN	T:											
C	CRITICAL FLIGH HDW/FU	r	RE A	EDUNDA	NCY B	SCREI	ENS	c c	CII			
NASA IOA	[3 /3 [3 /3]	[N# [N#	A]	[N2	A]	[NA] NA]]] *		
COMPARE	[/	1	[3	[]	[]	[]		
RECOMMENI	DATIONS:	(If	difí	erent	fro	om NAS	SA)					
-	[/	1	[]	Ţ.]	[1	[(ADD/I] DELETE		
REMARKS:	TENTION			·	-		IN	ADEQUATI]		
REF: RI/	/nasa fm	EA/CIL	KEV.	LEW ME.	LITI	AG NO.	LES	· .				

	ENT I	D: MPS	MPS-4111 BASELINE [0605-1 NEW [
SUBSYSTI MDAC ID: ITEM:		MPS 411 GH2		s man	IFOLD	REP	RESS CH	ECK VALV	E (CV24)		
LEAD AN	ALYST	: А.Ј	.MARII	МО							
ASSESSMI	ent:										
	F	ICALITY LIGHT W/FUNC			idancy B		C		IL PEM		
NASA IOA		/3] /3]				A]	[NA]	[] *		
COMPARE	[/]	. [1	[]	[]	[]		
ECOMMENDATIONS	5:	(If di	ffere	nt fr	om N	'ASA)				
-	C .	/ 1	[)	[]	[]	(ADD)] /DELETE)		
* CIL RI	ETENT	ION RATIO	ONALE	: (If	appl	icab	ÄDE	QUATE [
REMARKS REF: R		A FMEA/C	IL RE	VIEW	MEETI	NG N	OTES.	1788 ARJF	1881 - 1919		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4120	PS-4120 BASELINE []									
	4120	TLS REPRESS CHECK V	ALVE (CV30)								
LEAD ANALYST:											
ASSESSMENT:											
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM											
HDW/FU		В С									
NASA [2 /1R IOA [3 /3	[P] [NA] [F] [P] NA] [NA]	[X] *								
COMPARE [N /N] [и] [иј [иј	[N]								
RECOMMENDATIONS:	(If different i	from NASA)									
[3 /3] [NA] [[D] DD/DELETE)								
	RATIONALE: (If app	plicable) ADEQUATE INADEQUATE									
REMARKS: LINE RUPTURE IS NOT VALID AS LOSS OF REDUNDANCY. FAILURE HAS NO EFFECT. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING											
NOTES.	TOP 12-23-07 AND	RI/MADA FREA/CIL R	EVIEW MEETING								

ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:	2/05/88 MPS-4121 0248-1	/05/88 NASA DATA: PS-4121 BASELINE [] 248-1 NEW [X]										
SUBSYSTEM: MDAC ID: ITEM:	4121	MANIF RTLS RE	PRESS CHECK	VALVE (CV30)								
LEAD ANALYST:												
ASSESSMENT:												
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM												
HDW/F	JNC A	В	C									
NASA [1 /1 IOA [3 /3] [NA] [NA	A] [NA] A] [NA]	[NA] [NA]	[X] *								
COMPARE [N /N] [] []	[]	[א]								
RECOMMENDATIONS	(If diff	erent from N	ASA)									
[3 /3] [NA	i [NA]		[ADD/DELETE)								
* CIL RETENTION	RATIONALE:	(If applicab	ADEQUATE	[]								
INADEQUATE [] REMARKS: THE VALVE IS ONLY REQUIRED TO OPEN DURING AN RTLS ABORT. LACK OF HELIUM REPRESS WILL ALLOW VENTING OF RESIDUAL H2 AFTER LANDING TO CREATE A FIRE HAZARD. NOMINAL NA, ABORT 1/1. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.												

ASSESSMENT ASSESSMENT NASA FMEA	ID:	MPS-413		NASA DATA: BASELINE [] NEW [X]								
SUBSYSTEM: MDAC ID: ITEM:		MPS 4130 PNEU VA	LVE HE S	UPPLY-IS	OLATION VALV	Œ (LV7,LV8)						
LEAD ANALY	ST:	A.J.MAR	INO	=								
ASSESSMENT	: :											
CR	ITICAL FLIGH		REDUNDA	NCY SCRE	ENS	CIL ITEM						
		NC	A	В	С	IIM						
NASA [IOA [3 /1R 3 /3] [P] NA]	[F] [NA]	[P] [NA]	[X] * []						
COMPARE [/N] [n j	[N]	[и]	[N]						
RECOMMENDA	TIONS:	(If d	ifferent	from NAS	SA)							
<u>-</u>	/] [1	[]	[]	[] ADD/DELETE)						
* CIL RETE	NTION I	RATIONAL	E: (If a	pplicable	e) ADEQUATE INADEQUATE							
SUBSEQUENT WILL PREVE LANDING WI RELIEF SYS	VALVE NT MAN LL CRE TEM AS	OPERATI IFOLD RU ATE A FI REDUNDA	ON MAY B PTURE. RE HAZAR NCY IS I	E IMPOSS VENTING I D. RI/NI NVALID.	RATE PREVALV IBLE. RELIE HYDROGEN DUR ASA USE OF	ES AT MECO.						

	2/05/88 MPS-4131 0238-2							NASA DATA: BASELINE [] NEW [X]															
SUBSYSTEM: MPS MDAC ID: 4131 ITEM: PNEU LEAD ANALYST: A.J.M						/AI	LVE	HI	E S	UI	PPI	.Υ-	-ISC)L/	TI	ON	VAI	LVE	(1	LV7	,LV	78)	
LEAD ANA	ALYS	T:		Α.	J.MA	\R]	INC)															
ASSESSMI	ENT:																				· ·		
			CALI IGHT				RE	וטם:	NDA	NC	CY	sc	REF	ens	3				CII ITI				
	H	DW	/FUI	IC			A				В				C		= .	,					
NASA IOA	[3	/1R /3]		[P NA]		[[F NA]	er er]	P NA	,]	hou .		נ נז	к]]	*		
COMPARE	[/N]		[N]		[N]		[N]			[]	v]			
RECOMME	TAŬ	IO	NS:		(If	đ	lff	ere	ent	: 1	fro	m	NAS	SA))								
-	[/]		[3		[]		[j	- ((AD	[D/1	DEI	ETE	:)	
* CIL RI	ETEN	ŢΙ	ON I	TAS	IONA	LI	₫:	(I;	£ a	pŗ	oli	,ca	ble	1,124		-	JATE JATE		[]			
REMARKS ACCUMULI SUBSEQUI WILL PRI	ATOR ENT EVEN	VA T	LVE MAN	OP [FO	ERAT LD I	PIC RUI	NC PTU	MA'	/ B	E VI	NI Ine	IPC 'IN	SSI IG F	BI IYI	E.) GE1	ELI V DU	EF	S	'SI	'EMS		ND
LANDING	WIL	L	CREA	ATE	AI	FII	RE	HA	ZAR	D.		RI	./NA	S	\ C	SE	OF.						

ASSESSME ASSESSME NASA FME		2/05/88 MPS-413 0238-3	2	NASA DATA: BASELINE [] NEW [X]							
SUBSYSTE MDAC ITEM:	EM:	MPS 4132 PNEU VA	LVE HE	SUPPLY-I	SOLATION VA	LVE (LV7,L					
LEAD ANA	ALYST:	A.J.MAR	INO								
ASSESSME	ENT:										
	CRITICAL:		REDUN	DANCY SCR	EENS	CIL ITEM					
	HDW/FU	_	A	В	С						
NASA IOA	[3 /3 [3 /3] [NA] NA]	[NA] [NA]	[NA] [NA]	[] *					
COMPARE	[/] [1	[]	[]	[]					
RECOMMEN	DATIONS:	(If d	iffere	nt from N	ASA)						
	[/] [1	[]	[]	[] (ADD/DELET					
* CIL RE	ETENTION 1	RATIONAL	E: (If	applicab	le) ADEQUAT INADEQUAT						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:					5-414				NASA DATA: BASELINE [] NEW [X]							<u></u>		
SUBSYSTI MDAC ID ITEM:				MP: 41	40	E (CROS	SOVE	R S	SOL	ENOI	D ((LV10)					
LEAD AND	ALY	ST	:	A	J.MAI	RIN	10											
ASSESSMI	ENT	:																
		F.	LTGI	भग				NDAN(C¥	sc	REEN	S		(CIL [TE	-		
<u>-</u>		HD	W/F	JNC		2	A		В			C	· 12-					
NASA IOA	[3 3	/11 /3	R]		[] []	?] ?]	[F F]	[P P]	[: x	[]	*	
COMPARE	[/N	1	1	[]	[]	[]	([N]		
RECOMME	NDA'	TI(ons	:	(If o	lii	ffer	ent :	fro	om	NASA)						
-	[/]	.	[3	[]	[1 () ADI	5/C	EL	ete))
* CIL R	ETE	NT	ION	RAT	IONA	LE :	: (I	f ap	pl:	ica	•	Al	DEQUATE DEQUATE	- 1	[]		
REMARKS LOSS OF FOR DUM VENTING HAZARD. REF: R	AL P. OF	R	ELII 2 D	EF S' URIN	ystei G en'	MS TR	WIL YLA	L PR	EVI G I	TME YAY	LL P MAN CRE	REC IFO	CLUDE V. OLD RUP E A FIR	ALV TUF E/F	ZE RE, EXP	OP: B	TU SIOI	N
LOSS OF FOR DUM VENTING HAZARD.	AL P. OF	R	ELII 2 D	EF S' URIN	ystei G en'	MS TR	WIL YLA	L PR	EVI G I	TME YAY	LL P MAN CRE	REC IFO	CLUDE V. OLD RUP E A FIR	ALV TUF E/F	ZE RE, EXP	OP: B	TU SIOI	N

ASSESSMENT ASSESSMENT NASA FMEA	ID:	MPS-414		NASA DATA: BASELINE [] NEW [X]								
SUBSYSTEM: MDAC ID: ITEM:		MPS 4140 PNEU HE	CROSSOVE									
LEAD ANALYS	ST:	A.J.MAR	RINO									
ASSESSMENT:	:											
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM												
F	IDW/FU	NC	A	В	С							
NASA [] AOI	1 /1 3 /3] [NA] [P] [NA] [NA] P]	[X] *						
COMPARE [N /N] [иј[и ј [N]	[N]						
RECOMMENDAT	cions:	(If d	lifferent	from NASA	7)							
	/] [] [] [[] (Al	[] DD/DELETE)						
* CIL RETEN	MION	RATIONAL	E: (If ap	•	ADEQUATE NADEQUATE	į j						
REMARKS: POSSIBLE OV REF: RI/NA NOTES.						EVIEW MEETING						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		er ye	BASELINE	[X]						
	MPS 4141 PNEU HE CROSSOVI	CROSSOVER SOLENOID (LV10)								
LEAD ANALYST:	A.J.MARINO									
ASSESSMENT:										
CRITICAL: FLIGH	ITY REDUNDAI	NCY SCREENS		CIL ITEM						
HDW/FU		В	C							
] [p]			[] *						
COMPARE [N /N] [N]	[и]	N]	[]						
RECOMMENDATIONS:	(If different	from NASA)								
[3 /1R] [P]	[F] [P]	[A] DD/DELETE)						
* CIL RETENTION	RATIONALE: (If a	pplicable) IN	ADEQUATE ADEQUATE							
REMARKS: LOSS OF ALL REDU FOLLOWING MECO I RUPTURE. VENTIN FIRE/EXPLOSION H	MPOSSIBLE. RELI G HYDRÖGEN DURING	8) WILL MA EF SYSTEMS	KE VALVE (WILL PREVE	PERATION ENT MANIFOLD						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4142	4142 BASELINE []									
SUBSYSTEM: MDAC ID: ITEM:	MPS 4142 PNEU HE CROSSOVER	142 NEU HE CROSSOVER SOLENOID (LV10)									
LEAD ANALYST:	A.J.MARINO										
ASSESSMENT:											
CRITICAL: FLIGH		CY SCREENS	CIL ITEM								
HDW/FU		ВС	I I Divi								
NASA [3 /1R IOA [3 /3] [P] [] [NA] [F] [P] NA] [NA]	[X] *								
COMPARE [/N] [N][иј [иј	[א]								
RECOMMENDATIONS:	(If different f	from NASA)									
[3 /3] [AN] [[D] DD/DELETE)								
* CIL RETENTION	RATIONALE: (If app	olicable) ADEQUATE INADEQUATE									
CONSIDERED LOSS	OF REDUNDANCY.	RE NOT VALID FAILUR	ES TO BE								

ASSESSMENT DATE: 2/05/88 ASSESSMENT ID: MPS-4150 NASA FMEA #: 0225-1								NASA DATA: BASELINE [] NEW [X]											
SUBSYST MDAC ID ITEM:	SUBSYSTEM: MPS MDAC ID: 4150 ITEM: LO2 PREVALVE LEAD ANALYST: A.J.MARINO						VE	OPE	ΞN	ING	SOI	ĿΕΙ	10ID	(L/	712,	LV1	.4,LV1	.6)	
LEAD AN	ALYS	T:	:	A.	J.MA	R]	ENC)											
ASSESSM	ENT:																		
		E T	TOW	71													CIL		
	H	DW	/FU	NC			A				В			С	;	.= .	- 1,11	11.1	
NASA IOA	[3	/1R /3]		ן [P NA]	[:	P] NA]		[P] NA]			[]*	
COMPARE	[/N]		[N]	(-	и ј		[N]			[]	
RECOMME	NDAT	IC	NS:		(If	đi	lff	ere	ent	f	rom	NAS	A))					
-	Ĺ		/]		[]	[•]		[3	-	(AI] ELETE	:)
* CIL R	ETEN	TI	ON 1	RAT	IONA	LF	Ē:	(I 1	f ar	q	lic			ADE(
REMARKS NSTS 22:		2	3 20	 3 D	PECI	.TTT)FS	: ጥዩ	क्षा व	'N	CLII								OP.
RIV IN PROVIDER REF: RINOTES.	THE D FO	SU R	ICCE: THE	55I 12	ON C	F EI	FA) I	ILI	JRES	s. S	A. TIL	S SU L 3/	CF 1F	I, RI R FOI	ELIE R LC	EF W	VILL NER	BE T.	= ======

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEM: MDAC ID: ITEM:	MPS 4151 LO2 PREVALVE	OPENING SOLENOID (LV)	.2,LV14,LV16)						
LEAD ANALYST:	A.J.MARINO								
ASSESSMENT:									
CRITICAL FLIGH		NDANCY SCREENS	CIL ITEM						
HDW/FU		ВС							
NASA [2 /1R IOA [3 /3] [P]] [NA]	[F] [P] [NA]	[X] *						
COMPARE [N /N] [N]	[и] [и]	[N]						
RECOMMENDATIONS:	(If differ	ent from NASA)							
] []	[] []	[] (ADD/DELETE)						
* CIL RETENTION	RATIONALE: (I	f applicable) ADEQUATE	<u> </u>						
REMARKS:		INADEQUATE							
	L OF 12-23-87	AND RI/NASA CIL WORKS	SHEET OF 12-14-						

ASSESSMI ASSESSMI NASA FMI		NASA DATA: BASELINE [] NEW [X]									
SUBSYSTE MDAC ID: ITEM:			MPS 4152 LO2 P	REVA	LVE O	PENI	NG S	OLENO	ID (LV)	.2,LV14	,LV16)
LEAD ANA	LYS	T:	A.J.M	ARIN	0						
ASSESSME	ENT:									÷	
		TICAL FLIGH DW/FU		R:	EDUND	ANCY B		REENS C		CIL ITEM	
NASA				ſΡ	1					r x	1 *
IOA	Ĺ	2 /1R	j	[P	j ₌₌	[F]	[P]	[X]
COMPARE	ſ	/	1	[]	Ι]	[]	[]
RECOMMEN	IDAT	ions:	(If	dif	feren	t fr	om N	IASA)			
-	C	/]	[] .	[]	[] ([ADD/DE] LETE)
* CIL RE	ETEN	TION	RATION	ALE:	(If	appl	icab	A	DEQUATE DEQUATE]]
REMARKS: REF: RI		SA CI	L OF 1	2 - 23	-87 A	ND R	I/NA	SA CI	L WORKS	HEET O	F 12-14-
07									1 7 7 7 7 7		

ASSESSMENT DATE: 2 ASSESSMENT ID: M NASA FMEA #: 0	PS-4152A BASELINE []									
MDAC ID: 4	MPS 4152 LO2 PREVALVE OPEN	ING SOLENOID (LV12	,LV14,LV16)							
LEAD ANALYST: A	A.J.MARINO									
ASSESSMENT:										
CRITICALIT FLIGHT	redundanc	Y SCREENS	CIL ITEM							
HDW/FUNC		В С								
NASA [3 /1R] IOA [2 /1R]] [P] [] [P] [F] [P] F] [P]	[X] * [X]							
COMPARE [N /]	ן נון נ] []	[]							
RECOMMENDATIONS:	(If different f	rom NASA)								
[2 /1R]] [P] [[] DD/DELETE)							
* CIL RETENTION RA	ATIONALE: (If app	ADEOUATE	[]							
INADEQUATE [] REMARKS: FAILURE OF BOTH OPENING SOLENOIDS CAN PREVENT PREVALVE CLOSURE DESPITE PROPER OPERATION OF CLOSING SOLENOIDS. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 12-14 87.										

ASSESSMENT DATE: 2/05/88 ASSESSMENT ID: MPS-4160 NASA FMEA #: 0226-1					0	NASA DATA: BASELINE [] NEW [X]										
SUBSYST MDAC ID ITEM:				MPS 4160 LO2		VA:	LVE	OPE	NII	NG :	SOLEN	OID	(LV1	3,LV1	.5,1	LV17)
LEAD AN	ALY	ST	:	A.J.	MAR:	IN)									
ASSESSM	ENT	:												1 2 1 2 4 2	F ;	. e 4
	CR		ICAL LIGH			R	EDU.	NDAN	CY	SC	REENS			CII		
	,	_	W/FU			A			В			С				
NASA IOA	[2	/1R /1R]	[[P P]	[F F]]	P] P]		K] K]]	*
COMPARE	(/]	[]	[]	[]		Ţ]	
RECOMME	NDA	TI	ons:	(I	f d	if	fer	ent	fr	oma 1	NASA)					
	[/]	[]	[]	[]	(.	[ADD/D] ELE	ETE)
* CIL R	ETE:	NT:	ION :	RATIO	NAL	E:	(I	f ap	pl:	ical			QUATE QUATE]	e e e
REMARKS REF: R 87.		AS	<u>A</u> CI	L OF	12-	23	-87	AND	R	[/N				_	OF	12-14-

	2/05/88 MPS-4160A 0290-1	NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEM: MDAC ID: ITEM:	MPS 4160 LO2 PREVALV	E OPENING SOLENO	ID (LV13,LV15,LV17)						
LEAD ANALYST:	A.J.MARINO								
ASSESSMENT:									
CRITICAL FLIGH		OUNDANCY SCREENS	CIL ITEM						
HDW/FU		ВС							
NASA [1 /1 IOA [2 /1R] [NA]	[NA] [N [F] [P	A] [X]* [X]						
COMPARE [N /N] [N]	[и] [и] []						
RECOMMENDATIONS:	(If diffe	erent from NASA)							
] []	[] [] [] (ADD/DELETE)						
* CIL RETENTION	RATIONALE: (A	DEQUATE []						
REMARKS: REF: RI/NASA CI	L OF 12-23-8		DEQUATE [] L WORKSHEET OF 12-14-						
87.									

ASSESSMENT DATE: 2/08/88 ASSESSMENT ID: MPS-4160B NASA FMEA #: 0290-2								NASA DATA: BASELINE [] NEW [X]											
	SUBSYSTEM: MPS MDAC ID: 4160 ITEM: LO2 PREVALVE								CLOS	SIN	ig s	SOLE	101	D (I	.V13	, LV	V15	, LV	17)
LEAD AN	ALY	ST	:	A.J	. MA	RI	NO												
ASSESSM	ENT	:																	
		F	ICAL LIGH W/FU	T			REI A	OUNI	OANG	CY B	SCF	REENS	c C				IL PEM	Ī	
NASA IQA			/1 /1R]	. !	[NA P		[NA F]	[NA P]		[X X] *	
COMPARE	[N	/N]		[N :	1	[N]	[N]		[]	
RECOMME	NDA	TI	ons:	(Ιf	di	ffe	erei	nt i	fro	m N	NASA)							
-	[/]		[1	[]	[]	(AI] ,QC	/DE] LET	E)
* CIL RI REMARKS REF: RI	:											IN	IAD	EQUA EQUA WOR	TE	[[EET	ľÕ]] F 1	2-14-
87.	, ,,										,						_		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [] NEW [X]											
MDAC ID:	MPS 4161 LO2 PREVALVE C	LOSING SOLENOID (LV	l3,LV15,LV17)										
LEAD ANALYST:	A.J.MARINO												
ASSESSMENT:													
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM													
HDW/FU	INC A	ВС											
NASA [2 /1R IOA [2 /1R	[P] [P]	[F] [P] [F] [P]	[X] * [X]										
COMPARE [/] []	[] []	[]										
RECOMMENDATIONS:	(If differen	t from NASA)											
[/] []	[] [-]	[] (ADD/DELETE)										
* CIL RETENTION	RATIONALE: (If	applicable) ADEQUATI INADEQUATI											
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87 A	ND RI/NASA CIL WORKS	•										

ASSESSMENT DATE: 2/05/88 ASSESSMENT ID: MPS-416 NASA FMEA #: 0226-2							162		NASA DATA: BASELINE [] NEW [X]													
SUBSYST MDAC ID ITEM:					416	52	SE.	VAI	LVE	CL	os	II	1G	SOL	Εì	101	D (L7	V13,	LV1	.5,I	.V17	`)
LEAD AN	ALY	ST	:		Α.:	J.M.	AR:	INC)													
ASSESSM	ENT	:																	2- 2		i eru insil	
	CR		ICA LIG					RI	EDUI	NDAI	NC	Y	sc	CREE	NS	3			CIL			
		HD	W/F	U	ic			A				В				С					•	
NASA IOA]	3 3	/1 /3	R]]	P NA]		[P NA]] [P NA]		[]	*	
COMPARE	[/N	ſ)		[N]		[N]		[N]		נ]		
RECOMME	NDA	TI	ONS	:	ı	(If	đ:	if1	ere	ent	f	ro	m	NAS	A)	ļ						
	[/]		[]		[]		[]	(AD	[D/D		TE)	
* CIL R		NT	ION	IF	CTAS	ONZ	ΙIJ	€:	(I:	f aj	рp	11	Lca		•		EQUAT		[]		
REMARKS NSTS 22 RIV IN PATHS. REF: R	206 THE ST	S IL	UCC L 3	ES	SIC LR 1	ON C	F	F <i>I</i> 02	III INI	JRES ERT	s.		TH	IEY	RI	MA	IN V	ALID	RE	LIE	F	

ASSESSMENT DATE ASSESSMENT ID:	MPS-416			NASA DATA BASELINE	
	0226-4			NEW	, [v]
SUBSYSTEM: MDAC ID: ITEM:	MPS 4162 LO2 PRE	EVALVE C	LOSING SOI	LENOID (LV13	,LV15,LV17
LEAD ANALYST:	A.J.MAF	RINO			
ASSESSMENT:					
CRITICA FLIG		REDUNDA	ANCY SCREE	ens	CIL ITEM
HDW/F		A	В	C	LIDN
NASA [3 /1 IOA [3 /3	R] [[P] [NA]	[F] [NA]	[P] [NA]	[X] * []
COMPARE [/N] [[א]	[N]	[N]	[N]
RECOMMENDATIONS	: (If d	differen	t from NAS	SA)	
[2 /1	R] [[P]	[F]	[P] (A	[] ADD/DELETE)
* CIL RETENTION	RATIONAL	LE: (If	applicable	adequate	•
REMARKS: SECOND FAILURE REF: RI/NASA C			VE.	THADUQUALL	

ASSESSMI ASSESSMI NASA FMI	ENT I	D:	MPS-41	.64	ŀ						N	ASA DAT BASELIN NE			
SUBSYSTI MDAC ID: ITEM:			MPS 4164 LH2 PF	ξĒΊ	/AI	LVE OP	Έl	NIN	1G	SOLE	NC	OID (LV1	.8,LV2	0,LV2	2)
LEAD ANA	ALYST	:	A.J.MA	RJ	NC)							. .		
ASSESSMI	ENT:												. 1 1		
					REDUNDANCY SCREENS								CIL		
	_	LIGH W/FUI	NC		A			В		ì	C	, ,	115	M.	
NASA IOA	[3 [3	/1R /3]	[P NA	A]	[P NA] \]]	P) [A]	[] *	
COMPARE	[/N	1	[N]	[N]	[N	1]	[]	
RECOMME	NDATI	ons:	(If	đi	lff	ferent	: 1	fro	om	NASA)				
•	[3	/1R	1	[P]	[F]	[P	, 1	ADD/D)
* CIL RI		ION 1	RATIONA	LI	E:	(If a	p	91 i	lca	44 -V. M. 44 - T	À	DEQUATE]	
FAILURE REF: R	IS N					-87.				1. 1.16.4		er e			z ^{† †}

	2/08/88 MPS-4165 0227-4	NASA DATA: BASELINE [] NEW [X]						
	MPS 4165 LH2 PREVALV	; PREVALVE OPENING SOLENOID (LV18,						
LEAD ANALYST:	A.J.MARINO							
ASSESSMENT:								
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM								
HDW/FU	NC A	В С						
NASA [2 /1R IOA [3 /3] [P]] [F] [P] [NA] [NA] [X] *					
COMPARE [N /N] [N]] [и] [и] [и]					
RECOMMENDATIONS:	(If diffe	erent from NASA)						
-[/] [] [] [] [] (ADD/DELETE)					
* CIL RETENTION	RATIONALE:	AD	EQUATE [] EQUATE []					
REMARKS: REF: RI/NASA CI	L OF 12-23-8		WORKSHEET OF 12-15-					

ASSESSMEI ASSESSMEI NASA FMEI	NT II):	MPS-41	166										DATA SELINE NEW	[
SUBSYSTEM MDAC ID: ITEM:			MPS 4166 LH2 PF	REV	AL	VE OF	PEN	III	I G	SOI	Γ	101	D	(LV18	, L	V2(),1	LV22)	
LEAD ANA	LYST	:	A.J.MA	RI	NO	•													
ASSESSMEI																			
CRITICALITY REDUNDANCY SCREENS FLIGHT								CIL ITEM											
	HDV	V/FUN	ic		A			В				С		***.	-		•		
NASA IOA	[2 [2	/1R /1R],	[P P]	[P F]	-	[P P]		[X X]	*	
COMPARE	[/]	[]	[N	J		[J		[]		
RECOMMENI	OITAC	ons:	(If	di	ff	erent	:. f	ro	m	NAS	A)								
	[3	/3]	[NA]	[N#	7]		[NA	.]	(A)		D / DE		TE)	
* CIL RE	[ENT]	CON F	RATIONA	LE	:	(If a	pp	1i	ca	ble	;) _	.	TO	VIX.MP			1		
											IN	IAD	EQ	UATE UATE]]		
REMARKS: FAILURES 2.3.2d). HARMFUL I REF: RI, 87.	SEC EFFEC	COND	FAILUR	E	WI	LL PR	ŒV	EN	T	CLC	SU	JRE	A	T MEC	ο,	BU	T	HAS	NO

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-416	6 A	NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEM: MDAC ID: ITEM:	MPS 4166 LH2 PRE	VALVE OPEN	IING SOLENO	ID (LV18	,LV20,LV22)					
LEAD ANALYST:	A.J.MAR	INO								
ASSESSMENT:										
CRITICAL FLIGH	CIL ITEM									
HDW/FU		A	В	}	TIEM					
NASA [2 /1R IOA [2 /1R] [P] [P] [F] [F F)]	[X] * [X]					
COMPARE [/] [] [] []	[]					
RECOMMENDATIONS:	(If d	ifferent 1	from NASA)							
[3 /3] [NA] [NA] [N		[D] DD/DELETE)					
* CIL RETENTION	RATIONAL	E: (If app	A	DEQUATE	[]					
REMARKS: FAILURE TO CLOSE INTERFACING SUBS 2.3.2d). REF: RI/NASA CI 87.	YSTEMS I	S NOT PART	FFECT. PO	STULATING NALYSIS	G FAILURES IN					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/08/88 MPS-4167 0228-1		NASA I BASE	DATA: LINE [] NEW [X]
SUBSYSTEM: MDAC ID: ITEM:	4167	LVE CLOSI	NG SOLENOID (1	LV19,LV21,LV23)
LEAD ANALYST:	A.J.MARING	0		
ASSESSMENT:				157.
CRITICAL	ITY RI	EDUNDANCY	SCREENS	CIL ITEM
HDW/FUI	r NC A	В	C	TIEM
NASA [2 /1R IOA [2 /1R] [P] [P] [P]	[X] *
COMPARE [/] [] [N] []	[]
RECOMMENDATIONS:	(If dif:	ferent fro	om NASA)	
[3 /3] [NZ	A] [N	A] [NA]	[D] (ADD/DELETE)
* CIL RETENTION I	RATIONALE:	(If appl:		ATE [] ATE []
REMARKS: FAILURE TO CLOSE INTERFACING SUBSTREF: RI/NASA CIT 87.	PREVALVE INSTEMS ARE	HAS NOT E NOT CONS -87 AND R	FFECT. SUBSECTION OF STREET STREET (NSTS 2	QUENT FAILURES IN 22206, 2.3.2d).

	2/08/88 MPS-4167A 0290-1	NASA DATA: BASELINE [] NEW [X]
MDAC ID:	MPS 4167 LH2 PREVALVE CLOSING SOI	LENOID (LV19,LV21,LV23)
LEAD ANALYST:	A.J.MARINO	
ASSESSMENT:		
CRITICAL FLIGH HDW/FU		ENS CIL ITEM C
NASA [1 /1 IOA [2 /1R] [NA] [NA]] [P] [F]	[NA] [X] * [X]
COMPARE [N /N] [N] [N]	[и] []
RECOMMENDATIONS:	(If different from NAS	5A)
[/] [] []	[] [] (ADD/DELETE)
* CIL RETENTION	RATIONALE: (If applicable	ADEQUATE [] INADEQUATE []
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87 AND RI/NASA	A CIL WORKSHEET OF 12-14-

ASSESSME ASSESSME NASA FME	NT	İ		MP	08/8 5-4: 90-2	167	7B		NASA DATA: BASELINE [] NEW [X]							7 7 2 50 505				
SUBSYSTE MDAC ID: ITEM:		_		MP: 41 LH:	67	RE7	/AI	LVE	CLO	si	NG	SOLI	EN	ΟI	D	(LV19	, L'	V21	L,I	.V23)
LEAD ANA	LYS	ST:	:	A.	J.M	AR]	ENC													
ASSESSME	NT:	:																٠.		<u> </u>
-		F	ICAL LIGH W/FU	T			RI A	EDUI	NDAN	CY B		REEN		C			-	IL PEN	T	
NASA IOA	[1	/1 /1R]		[NA P	\]	[N. F	A]	. {	:	NA P]		[X X]	*
COMPARE	C	N	/N]		[N]	[N]	[N]		[]	
RECOMMEN	[ADI	ľI	ons:		(If	đi	Lff	ere	ent	fr	om	NASA	۲)							
-	[/]		ξ]	[]	(•]	(A	[DD,	/DF] ELE	TE)
* CIL RE		T:	ION	RAT:	IONZ	ALI	Ξ:	(I	f ap	pl	ica	•				UATE UATE	[-]	
		\Si	A CI	L O	F 12	2-2	23-	-87	AND	R	I/N	IASA	C	IL	. W	ORKSH	EET	ר כ	F	12-14-

展展的主义人名 人名古基拉 可可以 海拔

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-416		NASA DATA BASELINI NET	
SUBSYSTEM: MDAC ID: ITEM:	4168	VALVE CLOSING	SOLENOID (LV1	9,LV21,LV23)
LEAD ANALYST:	A.J.MAR	INO		
ASSESSMENT:				
CRITICAL FLIGH		REDUNDANCY SC	REENS	CIL ITEM
	NC	A B	С	
NASA [3 /1R IOA [2 /1R] [P] [F] P] [F]	[P] [P]	[X] * [X]
COMPARE [N /] [] []	[]	[]
RECOMMENDATIONS:	(If d	ifferent from	NASA)	
[3 /3] [NA] [NA]	[NA]	[D] ADD/DELETE)
* CIL RETENTION	RATIONAL	E: (If applica	ble) ADEQUATE INADEQUATE	[]
REMARKS: FAILURE OF PREVA INTERFACING SUBS REF: RI/NASA CI 87.	YSTEMS A	RE NOT CONSIDE	AS NO EFFECT. RED (NSTS 222	FAILURES IN 06, 2.3.2d).

ASSESSM ASSESSM NASA FM	ENT	ID:	2/08/8 MPS-41 0228-2	L 69		NASA DATA: BASELINE [] NEW [X]									
SUBSYST MDAC ID ITEM:			MPS 4169 LH2 PI	REVA	LVE C	LOS	SIN	G SO1	LEI	10I	D (LV19	, LV	21	, LV2	3)
LEAD AN	ALYS'	T:	A.J.M	ARING)										
ASSESSM	ENT:												·	e ele	
								CI	L EM						
		DW/FU		A			В			С	-		LH		
NASA IOA		3 /1R 3 /3]	[P] A]	[F NA]	[P NA]	[[X	*	
COMPARE	[/N	1	[N]	[N]	[N]	[N]	
RECOMME	NDAT	ions:	(If	dif	feren	t 1	fro	m NAS	5A))					
_	ſ	/	1	[]	C]	[] (AI	[OD/	DE] LETE)
* CIL R	ETEN	TION	RATIONA	ALE:	(If	app	pli,	cable			EQUATE EQUATE		÷. · .]	
REMARKS REF: R	-	SA CI	L OF 12	2-23	-87 A	ND	RI	/NAS/	A (CIL	WORKSHI	EET	' O	F 11	-20-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			NASA DATA: BASELINE [] NEW [X]						
SUBSYSTEM: MDAC ID: ITEM:	MPS 4169 LH2 PREV	VALVE CLOSING SO	LVE CLOSING SOLENOID (LV19,LV21,LV						
LEAD ANALYST:	ALYST: A.J.MARINO								
ASSESSMENT:									
CRITICALITY REDUNDANCY SCREENS CI									
FLIGH HDW/FU		A B	С	ITEM					
NASA [2 /1F IOA [3 /3] [P] [F] NA]	[P] [NA]	[X] *					
COMPARE [N /N) [иј [иј	[N]	[N]					
RECOMMENDATIONS:	(If d	ifferent from NA	SA)						
[/] [.] []	[] (A	[DD/DELETE)					
	RATIONAL	E: (If applicabl	e) ADEQUATE INADEQUATE						
REMARKS: REF: RI/NASA CI	L OF 12-	23-87 AND RI/NAS	A CIL WORKSH	EET OF 11-20					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [NEW [X							
	MPS 4170 LO2 FEEDL	INE RE	LIEF SHUT	OFF VALVE C	LOSING				
LEAD ANALYST:	A.J.MARIN	0							
ASSESSMENT:									
CRITICAL	CIL ITEM								
FLIGH HDW/FU	-T. 2 -		В	c	TIBN				
NASA [3 /3 IOA [2 /1R] [N	A]	[NA] [P]	[NA] [P]	[x] *				
COMPARE [N /N] [N	1	[и]	[N]	[N]				
RECOMMENDATIONS:	(If dif	ferent	from NAS	SA)					
. [/] []	[]	[] (A)	[] DD/DELETE)				
* CIL RETENTION	RATIONALE:	(If a	pplicable	ADEQUATE					
REMARKS: REF: RI/NASA FM	EA/CIL REV	IEW ME	ETING NOT	Es.	- · · · · · · · · · · · · · · · · · · ·				

新身,圆崖之东路。曹国县350 PRP2号7号4

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [] NEW [X]									
	MPS 4170 LO2 FEEDLINE	RELIEF SHUTOFF VALVE	CLOSING								
LEAD ANALYST:	ANALYST: A.J.MARINO										
ASSESSMENT:											
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C											
nDW/FU	NC A	В									
NASA [1 /1 IOA [2 /1R] [NA]] [P]	[NA] [NA] [P] [P]	[X] *								
COMPARE [N /N] [N]	[и] [и]	[]								
RECOMMENDATIONS:	(If differe	ent from NASA)									
. [/] []	[] []	[] (ADD/DELETE)								
* CIL RETENTION	RATIONALE: (If	f applicable) ADEQUATI INADEQUATI									
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87	AND RI/NASA CIL WORKS	SHEET OF 12-14-								

ASSESSMI ASSESSMI NASA FMI	ENT	II):	MPS-4	17	ов		NASA DATA: BASELINE [] NEW [X]									
SUBSYSTIMDAC IDITEM: SOLENOI	:			MPS 4170 LO2 F	EE	D L J	(NE)	RELI	Œ	, SI	IUTOI		VALVE	CLO	CLOSING		
LEAD AN	ALYS	ST:	:	A.J.M	AR:	INC)										
ASSESSMI	ENT:	:															
		FI	CAL LIGH V/FUI			RI A	EDUNI	DANC	EY B	SCF	REENS	c	ne de de que	C I	IL TEM	ľ	
NASA IOA	[1 2	/1 /1R]	[NA P	\]]	NA P	<u>]</u> .	. [[NA P	A]	[X X] ,	ŧ
COMPARE	[N	/N]	[N	1	[N]	€.	N]	[]	
RECOMME	NDAT	ric	ons:	(If	d.	ifí	fere	nt f	fro	om N	IASA)						
-	[/]	[]	[]	[[ADD	/DE		Œ)
* CIL R	ETEI				AL	Ε:	(If	app	oli	cak		ΑI	DEQUATI DEQUATI] 3	·]	
REMARKS	-		A CII		2-2	23-	-87 2	AND	RI	/NA	ASA C	ΞI	L WORKS	SHEE	r c) F 1	2-14-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			NASA DATA: BASELINE [] NEW [X]									
SUBSYSTEM: MDAC ID: ITEM: SOLENOID (LV24)	MPS 4171 LO2 FEEDL	INE REL	IEF SHU	FOFF VALVE C	CLOSING							
LEAD ANALYST:	A.J.MARIN	0										
ASSESSMENT:												
CRITICALITY REDUNDANCY SCREENS CITY FLIGHT ITY HDW/FUNC A B C												
NASA [2 /1R		1 [F]	[P]	[X] *							
IOA [2 /1R	j į P] [ΡĴ	[P j	[X] * [X]							
COMPARE [/] [] [N]	[]	[]							
RECOMMENDATIONS:	(If dif	ferent :	from NA	SA)								
. [/] [] []	[]	[] ADD/DELETE)							
* CIL RETENTION	RATIONALE:	(If ap	plicabl	e) ADEQUATE INADEQUATE								
REMARKS: REF: RI/NASA CI	L OF 12-23	-87 AND	RI/NAS	A CIL WORKSH	EET OF 8-18-							

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4172	BASEL	NASA DATA: BASELINE [] NEW [X]							
	MPS 4172 LO2 FEEDLINE REL	IEF SHUTOFF VALV	E CLOSING							
LEAD ANALYST:	A.J.MARINO	.J.MARINO								
ASSESSMENT:		-								
CRITICAL: FLIGHT HDW/FUI	<u> </u>	CY SCREENS B C	CIL							
NASA [3 /1R IOA [2 /1R] [P] [F] [P] P]	[X] *							
COMPARE [N /] [] [N] []	[]							
RECOMMENDATIONS:	(If different	from NASA)								
[3 /1R] [P] [P] [P]	[D] (ADD/DELETE)							
	RATIONALE: (If ap	plicable) ADEQUA INADEQUA	TE [] TE []							
INDICATORS.	NDANCY IS DETECTA L OF 12-23-87 AND									
			-							

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4172A		NASA DATA: BASELINE [] NEW [X]										
MDAC ID:	MPS 4172 LO2 FEEDL	INE REL	IEF SHU	TOFF VALVE	CLOSING								
LEAD ANALYST:	A.J.MARIN	o											
ASSESSMENT:													
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM													
HDW/FU		=′	В	С									
NASA [3 /1R IOA [2 /1R] [P		F]	[P] [P]	[X] *								
COMPARE [N /] [] [и]	[]	[]								
RECOMMENDATIONS:	(If dif	ferent	from NA	ASA)									
. [3 /1R] [P	'] [P]	[P]	[D] ADD/DELETE)								
* CIL RETENTION	RATIONALE:	(If ap	plicabl	.e) ADEQUATE INADEQUATE									
REMARKS: LOSS OF ALL REDUINDICATORS.	NDANCY IS	DETECTA	BLE VI										
	L OF 12-23	-87 AND	RI/NAS	SA CIL WORKS	HEET OF 8-18								

ASSESSME ASSESSME NASA FME	NT] A #:	D:	2/08/8 MPS-4: 0232-	180		NASA DATA: BASELINE [] NEW [X]									
SUBSYSTE MDAC ID: ITEM: SOLENOID	M:		MPS 4180 LH2 F	EEDI	INE	RELI	EF SH	UTOI	F VALVE	CLOSING					
LEAD ANA	LYSI	:	A.J.M	ARIN	O										
ASSESSME	NT:														
	I	LIGH		F	EDUN	IDANCY	SCR	REENS	J	CIL ITEM					
	HI	W/FUI	NC .	A		E	3		C						
NASA IOA		3 /3 2 /1R]	[N	A]	[] []	IA]	[[NA] P]	[x]					
COMPARE	[]	/N	ָ ֪֖֖	[N]_	[]	[]	[N]	[N]					
RECOMMEN	DATI	ons:	(If	dif	fere	ent fr	om N	IASA)							
-	[/]	[]	C]	[] (2	[ADD/DELETE)					
* CIL RE		CION I		ALE:	(If	app]	icab		ADEQUATE IADEQUATE						
REMARKS: REF: RI				REV	'IEW	MEETI	NG N	OTES	· .						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [] NEW [X]									
SUBSYSTEM: MDAC ID: ITEM: SOLENOID (LV25)	MPS 4180 LH2 FEEDLINE	RELIEF SHUTOFF VALVE C	LOSING								
LEAD ANALYST:	A.J.MARINO										
ASSESSMENT:											
CRITICAL FLIGH HDW/FU	T	DANCY SCREENS B C	CIL ITEM								
NASA [1 /1 IOA [2 /1R] [NA]	[NA] [NA] [P]	[X] * [X]								
COMPARE [N /N] [N]	[N] [N]	[]								
RECOMMENDATIONS:	(If differe	nt from NASA)									
. [/] []	[] [] (A)	[DD/DELETE)								
* CIL RETENTION	RATIONALE: (If	applicable) ADEQUATE INADEQUATE	[]								
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87	AND RI/NASA CIL WORKSH	EET OF 8-18-								

ASSESSMEN ASSESSMEN NASA FME	NT I		2/08/ MPS-4 0290-	180B		NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEM MDAC ID: ITEM: SOLENOID			MPS 4180 LH2 F	EEDL	INE	/E CLOSING							
LEAD ANA	LYST	:	A.J.M	ARIN	0								
ASSESSME	NT:												
CRITICALITY REDUNDANCY SCREENS FLIGHT HDW/FUNC A B C									CIL ITEM				
NASA IOA	[1 [2	/1 /1R]	[N [P	A]	[N.	A]	[N	[A]	[X] *			
COMPARE	[N	/N	1 .	[N	,]	[N	1	[N]	ן ני ד			
RECOMMEN	DATI	ons:	(If	dif	fere	nt fr	om NA	SA)					
-	[/	1	[]	[]	[]	[] (ADD/DELETE)			
* CIL RE	TENT	ION 1	RATION	ALE:	(If	appl	icabl	A	DEQUA				
REMARKS: REF: RI	/NAS	A CI	L OF 1	2-23	- 87	AND R	I/NAS	A CI	L WOR	RKSHEET OF 12-14-			

	NT	I	D:	TE: 2/08/88 : MPS-4181 0232-4							NASA DATA: BASELINE [] NEW [X]											
SUBSYSTE MDAC ID: ITEM: SOLENOID		ĽV:			.81	EEI)L]	INE	RELIEF SHUTOFF VALVE CLOSING									T				
LEAD ANALYST: A.J.MARINO																						
ASSESSME	NT:	}																				
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM																						
	H	IDI	/FUI	NC.																		
NASA IOA	[2 2	/1R /1R]		[P P]		[NA P]		[P P]			[X X]	*
COMPARE	[/]		[]	1	[N]		[]			[]	
RECOMMEN	DAT	ľI	SNS:		(If	di	Ĺfí	fere	ent	f	ro	om	NAS	SA)							
-	[/]		[]	-	[]		[]		(A)] ,dd	/DI] ELJ	ETE)
* CIL RE	TEN	T:	ION 1	RAT	CION	ALE	E :	(If	: aj	Þ	1 i	ica	able	•			LAU LAU		[]	
REMARKS: REF: RI 87.	/NA	\S	A CI	L C)F 1:	2-2	23-	-87	ANI	כ	R	[/]	ias <i>i</i>	A	CI	LW	ORI	(SH)	EE!	r (ΣF	8-18-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/08/88 MPS-4182 0232-2	NASA DATA: BASELINE [] NEW [X]									
SUBSYSTEM: MDAC ID: ITEM: SOLENOID (LV25)	MPS 4182 LH2 FEEDLINE RE	LIEF SHUTOFF	VALVE CLOS	SING							
LEAD ANALYST:	A.J.MARINO										
ASSESSMENT:											
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C											
NASA [1 /1 IOA [2 /1R] [NA]] [P]	[NA] [N [P] [P] [A	X] *							
COMPARE [N /N] [N]	ו און ווא] []							
RECOMMENDATIONS:	(If different	from NASA)									
. [/ ,] []	[] [] [(ADD,] /DELETE)							
* CIL RETENTION 1	RATIONALE: (If a	A	DEQUATE [DEQUATE []							
REMARKS: REF: RI/NASA CII 87.	L OF 12-23-87 AN	D RI/NASA CI	L WORKSHEET	r of 8-18-							

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/08/88 MPS-418 0232-5		NASA DATA: BASELINE [] NEW [X]									
SUBSYSTEM: MDAC ID: ITEM: SOLENOID (LV25)	MPS 4182 LH2 FE	EDLINE F	RELIEF SH	UTOFF VALVE (CLOSING							
LEAD ANALYST:	A.J.MA	RINO										
ASSESSMENT:												
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM												
HDW/FU	NC	A	В	С								
NASA [3 /1F IOA [2 /1F	l] l]	[P] [P]	[F] [P]	[P] [P]	[X] * [X]							
COMPARE [N /]	[]	[N]	[]	[]							
RECOMMENDATIONS:	(If o	differen	nt from N	ASA)								
[1 /1	1	[NA]	[NA]	[NA]	[A] ADD/DELETE							
* CIL RETENTION	RATIONA	LE: (If	applicab	le) ADEQUATE INADEQUATE	[]							
REMARKS: A SINGLE FAILURE REF: RI/NASA CI			MANIFOLD	RUPTURE.								

ASSESSME ASSESSME NASA FME	NT	I	D:	MPS-4190 BASELINE															
SUBSYSTE MDAC ID:				MPS 4190 HE SU											=12.= 12.	r , en e			
LEAD ANA	LΥ	ST	:	A.J.M	.J.MARINO														
ASSESSME	NT	:																	
		F	LIGH'	_				NDAN	CY B			s c			CI II	L EM	ľ		
		HDI	N/ FU	NC		A			B			C	8777						
NASA IOA	[1 2	/1 /1R]]	N# P)]	[NA F	\]]	NA P	\]		[X X]	*	
COMPARE	נ	N	/N]	[N]	[N]	[N]		[]		
RECOMMEN	IDA	TI	ons:	(II	đi	Ĺfí	fere	ent i	fro	om 1	NASA)							
-	[/]	[]	ſ]	[]	(AI] (dc	/DE] LE	TE)	
* CIL RE	ETE	NT:	ION :	RATION	IALI	Ξ:	(I:	f app	91 :	Lcal			EQUA	TE	į] =	-	
REMARKS: REF: RI NOTES.		AS	A CI	L OF 1	L2-2	23-	-87	AND	R	I/NZ			DEQUA		-] IM	EET	ING

SSESSMENT DATE: SSESSMENT ID: ASA FMEA #:		BASELINE	NASA DATA: BASELINE [] NEW [X]						
	4190	WN VALVE (LV26,LV27	·)						
AD ANALYST:	A.J.MARINO								
SESSMENT:									
FLIGHT	ITY REDUNDAN I NC A	CY SCREENS B C	CIL ITEM						
NASA [1 /1 IOA [2 /1R] [NA] [] [P] [NA] [NA] F] [P]	[X] * [X]						
MPARE [N /N] [N][и ј [иј	[]						
COMMENDATIONS:	(If different	from NASA)							
[/] [][] [] (A	[] .DD/DELETE)						
CIL RETENTION R	RATIONALE: (If ap)	ADEQUATE	[]						
MARKS:		INADEQUATE	į į						
BOARD VALVE (LV		TY 1/1. OUTBOARD V RI/NASA FMEA/CIL R							
OMPARE [N /N COMMENDATIONS: [/ CIL RETENTION R CMARKS: IBOARD VALVE (LV CF: RI/NASA CIL	[N] [N] [(If different) [] [] [RATIONALE: (If approximate)	N] [N] from NASA)] [] (A plicable) ADEQUATE INADEQUATE TY 1/1. OUTBOARD V	[] DD/DELETE) [] [] [] VALVE IS 2/11						

ASSESSME ASSESSME NASA FME	NT	I		•	MPS-4191							NASA DATA:BASELINE [] NEW [X]								
SUBSYSTE MDAC ID: ITEM:				MP: 41 HE	91	PI	LY	BI	OWI	700	۷N	VAI		(L\		LV27	- ##**))		ere area ar arr	राज्याचा (२०००) राज्याचा (१०००)
LEAD ANA	LY	ST	:	Α.	J.MA	R.	INC)												
ASSESSME	NT	:															-	L. 2		
		F	ICAL LIGH W/FU	T			RI A	EDU	NDA	M	CY B	SCR	REENS		2 2 1 2 TB		CI	L EM		
NASA IOA	[[3	/3]		[P]		[F]	[P]		[]	*
COMPARE	[N	/N]		[N]		[N]	[N]		[]	
RECOMMEN	IDA'	TI(ons:		(If	d :	ifi	fer	ent	: :	fro	om N	IASA))						
-	[1	/1]		[N2	\]		[N?	1]	[N	A]	(A	[DD/	A DE		TE)
* CIL RE		NT:	ION	RAT	IONA	L	E:	(I	f a	p	91 i	icab			DEQU DEQU	ATE ATE	[]	
INADEQUA		P	URGE	MA	Y CA	Ų.	SE	LC	SS	0	FI	/EHI	CLE	•						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/08/88 MPS-4192 0233-4	NASA DATA BASELINE NEW	
MDAC ID:	MPS 4192 HE SUPPLY BLOWDOW	N VALVE (LV26,LV27)
LEAD ANALYST:	A.J.MARINO		
ASSESSMENT:			
CRITICAL FLIGH		Y SCREENS	CIL ITEM
HDW/FU	-	в с	* * ****
NASA [2 /1R IOA [2 /1R] [P] [] [P]	F] [P] F] [P]	[X] * [X]
COMPARE [/] [] [] []	[]
RECOMMENDATIONS:	(If different f	rom NASA)	
.]] [] [] [] (A	[] DD/DELETE)
* CIL RETENTION	RATIONALE: (If app	olicable) ADEQUATE INADEQUATE	[]
REMARKS: REF: RI/NASA CI NOTES.	L OF 12-23-87 AND	RI/NASA FMEA/CIL R	

ASSESSMI ASSESSMI NASA FMI	ENT I	D:	2/08/ MPS-4 0221-	200		NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEMDAC ID:			MPS 4200 LO2 0	OUTBO	ARD	FILL '	VALV		NING	SOLENOID (LV28)			
LEAD ANA	ALYST	!:	A.J.M	IARIN	0								
ASSESSME	ENT:												
		'ICAL'	ITY r	R	EDUN	DANCY	SCR	EENS		CIL ITEM			
		W/FUI		A		В		C	as as a comme	The condition of the first section of the first sec			
NASA IOA	[3	/1R /3]	[P] A]	[P] A]	[P [N	A]	[X] *			
COMPARE	C	/N]	[И]	[N]	[N]	[N]			
RECOMMEN	NDATI	ons:	(If	dif	fere	nt fr	om N	ASA)					
-	[/	1	[]	[1	[]	[] (ADD/DELETE)			
* CIL RI	ETENT	I MOI	RATION	IALE:	(If	appl	icab	A	DEQUA				
REMARKS: REF: RI 87.		A CI	L OF 1	.2-23	-87	AND R	I/NA	SA CI	L WOR	KSHEET OF 12-15-			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4201	NASA DATA: BASELINE [] NEW [X]								
MDAC ID:	MPS 4201 LO2 OUTBOARD	FILL VALVE OPEN	E OPENING SOLENOID (LV28)							
LEAD ANALYST:	A.J.MARINO									
ASSESSMENT:										
CRITICAL FLIGH		DANCY SCREENS	CIL ITEM							
HDW/FU	NC A	ВС								
NASA [2 /1R IOA [3 /3] [P]] [NA]	[F] [P [NA] [NA] [X] *] []							
COMPARE [N /N] [N]	[и] [и] [и]							
RECOMMENDATIONS:	(If differe	ent from NASA)								
[/] []	[] [] [] (ADD/DELETE)							
* CIL RETENTION	RATIONALE: (If	AD	EQUATE [] EQUATE []							
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87	AND RI/NASA CIL	WORKSHEET OF 12-15-							

ASSESSMENT ASSESSMENT NASA FMEA	ID:	MPS-420			NASA DATA: BASELINE [] NEW [X]								
SUBSYSTEM: MDAC ID: ITEM:		MPS 4202 LO2 OUT	202 D2 OUTBOARD FILL VALVE OPENING SOLEN										
LEAD ANALYS	ST:	A.J.MA	RINC)									
ASSESSMENT:	1								-				
CRITICALITY REDUNDANCY SCREENS FLIGHT HDW/FUNC A B C													
	IDW/FUI												
NASA [IOA [3 /3 2 /1R] (NA P	\]	[N2	<u> </u>	[NZ	A]]	[X]	*		
COMPARE [n /n] [N]	N]	[N]	[N]			
RECOMMENDAT	cions:	(If d	liff	erent	fro	om NAS	SA)						
	/) ([]	[J	[] (AI	[DD/D] ELE	ETE)		
* CIL RETEN	TION I	RATIONAI	LE:	(If a	ppl:	icable	A	DEQUATE DEQUATE	[]			
REMARKS: THE RI/NASA CONCURS. REF: RI/NA							CAL:	ITY FOR A	ABOR				
87.													

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [] NEW [X]									
MDAC ID:	MPS 4202 LO2 OUTBOARD F										
LEAD ANALYST: A.J.MARINO											
ASSESSMENT:											
CRITICAL FLIGH		ANCY SCRE	ENS	CIL ITEM							
HDW/FU	NC A	В	С								
NASA [3 /1R IOA [2 /1R	[P] [P]	[F] [F]	[P] [P]	[X] * [X]							
COMPARE [N /] []	[]	[]	[]							
RECOMMENDATIONS:	(If differen	t from NA	.SA)								
] []	[]	[] (A)	[] DD/DELETE)							
* CIL RETENTION	RATIONALE: (If	applicabl	e) ADEQUATE INADEQUATE								
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87 A	ND RI/NAS	~	•							

assessm Assessm Nasa FM	ENT	I	D:	MP	PS-4210 BASELINE []											
SUBSYST MDAC ID ITEM:				MP: 42: LO:	10	ΙΤΒ	OARD	FILI	L VALV	/E C]	LOSING	SOL	ENO:	ID	(LV29))
LEAD AN	ALY	ST	:	Α.	J.MA	RI	NO									
ASSESSM	ENT	:													-	
		F	ICAL LIGH W/FU	T			REDUI Ā	DANC	ey scr B	REENS	5 C -		CI			
NASA IOA	[3	/3 /3]		[NA] NA]	[NA] NÄ]] [NA] NA]		[}	(<u>]</u>	*	
COMPARE	ſ		/]		[1	[]	[3		[3		
RECOMME	NDA'	TI	SNC:		(If	di	ffere	ent i	from N	iasa))					
-	ĺ		/]		[]	[]	[]	(A] DELI	ETE)	
* CIL R		NT:	ION	RAT:	IONA	LE	: (I1	fapp	olicab		ADEQU.	ATE	[]		
REMARKS THE RI/ REF: R 87.	NAS	A A	ANAI A CI	YSI: L O	S IN F 12	IDI !-2	CATES 3-87	3 1/1 AND	FOR RI/NA	ABOI ASA (RT. I	OA C RKSH	onci EET	JRS OF	12-15	5-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [] NEW [X]							
	MPS 4211 LO2 OUTBOARD FILL	VALVE CLOSING SOLENOID (LV29)							
LEAD ANALYST:	A.J.MARINO								
ASSESSMENT:									
CRITICAI FLIGH	ITY REDUNDANCY	SCREENS CIL ITEM							
HDW/FU	INC A E	з с							
NASA [3 /1F IOA [3 /3	[P] [F] [F] [NA] [N	F] [P] [X] * NA] [NA] []							
COMPARE [/N] [N] [N	(и) (и)							
RECOMMENDATIONS:	(If different fr	com NASA)							
] [] [] [] · [] (ADD/DELETE)							
* CIL RETENTION	RATIONALE: (If appl	licable) ADEQUATE [] INADEQUATE []							
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87 AND F	RI/NASA CIL WORKSHEET OF 12-15							

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		2	NASA DATA: BASELĪNĒ [] NEW [X]										
MDAC ID:	MPS 4212 LO2 OUTE	212 02 OUTBOARD FILL VALVE CLOSING SOL											
LEAD ANALYST:	A.J.MAR	NO											
ASSESSMENT:					÷.								
CRITICAL FLIGH		REDUNDANCY	SCREENS		CIL ITEM								
_ :	NC	A E		1 P. 1									
NASA [3 /1R IOA [3 /3	. [P] [P NA] [N	[E	P] [A]	[] *								
COMPARE [/N] [N] [N	()	1]	[]								
RECOMMENDATIONS:	(If di	ifferent fr	om NASA)										
. 1] [] [] [.	[] (AD	[D/DELETE)								
* CIL RETENTION :	RATIONALI	E: (If appl	P	DEQUATE									
REF: RI/NASA CI	L WORKSHI	ET OF 12-1	5-87.										

ASSESSME ASSESSME NASA FME	NT	II):		4212	2 A		NASA DATA: BASELINE [] NEW [X]											
SUBSYSTE MDAC ID:				MPS 4212 LO2										DII	D ((LV29)			
LEAD ANA	LYS	ST:	:	A.J.	MAR:	[N)												
ASSESSME	NT:	:																	
	CR1			ITY		RI	EDU	NDAN	CY	SCR	EE	NS					IL	ver	
	ŀ	-	LIGH W/FU	NC		A			В				С			1.	ΓEI	71.	
NASA IOA	[2	/1R /3]	[P N] 4]]	F N] A]		[P NA]		[X]	*
COMPARE	[N	/N]	[N	1	[N]		[N]		[N]	
RECOMMEN	DAT	rio	ons:	(I	f d	if	fer	ent	fr	om N	IAS	A)							
-	[/	1	[]	[]		[]	(A)	DD,	/D1] ELI	ETE)
* CIL RE	TEI	YT:	ION	RATIO	NAL	Ξ:	(I	f ap	pl	icab		•			ATE ATE]	
REMARKS: REF: RI 87.	/N2	AS	A CI	L OF	12-	23.	-87	AND	R	I/NA	SA	c	II	, WO	RKSH!	EE?	r (OF	12-15-

ASSESSME	ASSESSMENT DATE: 2/09/88 ASSESSMENT ID: MPS-4220 NASA FMEA #: 0223-1							NASA DATA: BASELINE [] NEW [X]									
SUBSYSTE MDAC ID:			MPS 4220 LO2		ARD F	'ILL	VA	TAE	OPI	ening	SOLE	NOID	(L)	V30)			
LEAD ANA	LYSI	:	A.J.	MARI	МО			-									
ASSESSME	NT:																
		'ICAL 'LIGH'	ITY T	1	REDUN	IDAN(CY	SCR	EENS	5		CIL	M.				
	HI	W/FU	NC		A ,		В			С							
NASA IOA	[3	/1R]	[]	P] NA]] [P NA]	[[P] NA]		[] ;	k			
COMPARE	[/N]	[]	и]	[N	J	[N]		[]				
RECOMMEN	DATI	ons:	(I	f di	ffere	nt i	fro	m N	ASA))							
•	[/]	(]	[]	[1	(A)	[DD/D1] ELET	ΓE)			
* CIL RE	-	'ION I	RATIO	NALE	: (If	apı	pli	cab.		ADEQU VADEQU	ATE	[]				
REF: RI	/NAS	A CT	L WOR	KSHE	ET OF	12-	-15	-87	-	á	T * 1						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/09/88 MPS-4221 0223-5	NASA DATA BASELINE NEW	
	MPS 4221 LO2 INBOARD FILL VALVE	OPENING SOLE	NOID (LV30)
LEAD ANALYST:	A.J.MARINO		
ASSESSMENT:			
CRITICAL		EENS	CIL
FLIGH HDW/FU	—	· c	ITEM
NASA [2 /1R IOA [3 /3] [P] [F]] [NA] [NA]	[P] [NA]	[X] *
COMPARE [N /N] [N] [N]	[N]	[N]
RECOMMENDATIONS:	(If different from N	ASA)	
()	.1 [] []	[] (A	[] DD/DELETĒ)
	RATIONALE: (If applicab	le) ADEQUATE INADEQUATE	• •
REMARKS: REF: RI/NASA CI	L OF 12-23-87 AND RI/NA	SA CIL WORKSH	EET OF 12-15-

ASSESSMI ASSESSMI NASA FMI	ENT	II):	MPS-4	2/09/88 MPS-4222 0223-2						DATA ELINE NEW					
SUBSYSTI MDAC ID: ITEM:				MPS 4222 LO2 I	NBO)AR	D FII	L	VA	LVE	OPE	ENING	SOLE	NO:	ID	(LV30
LEAD ANA	ALY:	ST	:	A.J.M	AR.	INO										
ASSESSMI	ENT	:														
		F	LIGHT	TTY		RE A			CY B	SCRI	EENS		·		IL PEM	1
WA CA			•							,	r					7 4
IOA	[2	/1R]	[P P]	[F	.1	[P]		[X] *
COMPARE	[N	/N]	[N]	[N]	Į	N]		[N]
RECOMMEN	IDA'	ric	NS:	(If	d:	iff	erent	: 1	fro	m N2	ASA)					
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* CIL RI		NT.	ON F	RATION.	ALJ	E:	(If a	ıpı	pli	cab]	·		UATE UATE]
		ASZ	A FMI	EA/CIL	RI	EVI	EW ME	E	CIN	G NO	TES	5.		-		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			NASA DATA: BASELINE [] NEW [X]						
MDAC ID:	MPS 4222 LO2 INBOAL	RD FILL VALVE O	PENING SOLEM	NOID (LV30)					
LEAD ANALYST:	A.J.MARING	0							
ASSESSMENT:									
CRITICAI FLIGH		EDUNDANCY SCREE	NS	CIL ITEM					
	NC A	В	С						
NASA [2 /11 IOA [2 /11	P [P] [F]] [F]	[P] [P]	[X] *					
COMPARE [/) [] []	[]	[]					
RECOMMENDATIONS	(If dif	ferent from NAS	A)						
1] [] []	[] (AI	[] DD/DELETE)					
* CIL RETENTION	RATIONALE:		ADEQUATE						
REMARKS: REF: RI/NASA CO 87.	L OF 12-23	-87 AND RI/NASA	~						

ASSESSME ASSESSME NASA FME	NT	D:	2/09/ MPS-4 0224-	223						ATA: .NE [.EW [X]	
SUBSYSTE MDAC ID: ITEM:			MPS 4223 LO2 I	NBO	ARD F	ILL	VALVE		OSING SO	LENOID	(LV31	
LEAD ANA	LYST	r:	A.J.M	ARI	NO							
ASSESSME	ENT:											
CRITICALITY REDUNDANCY SCREENS								5	CIL ITEM			
		FLIGH DW/FU		A			В		C			
NASA IOA		3 /3]	[NA] NA]	[NA] NA]	[NA] NA]] [] *	
COMPARE	[/]	[]	[]	[]	Ţ]	
RECOMMEN	DAT)	ons:	(If	di	ffere	nt i	from N	ASA))			
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* CIL RE	TENT	TION 1	RATION	ALE	: (<u>I</u> f	app	olicab		ADEQUAI LAUQADA]	
REMARKS:		ZA TEME	PA /CTT.	DE	TTFW	MEET	TNC N	ሰ ሞፑና	2			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4224	NASA DATA: BASELINE [] NEW [X]								
MDAC ID:	MPS 4224 LO2 INBOARD FILL VALVE O	LOSING SOLEN	OID (LV31)							
LEAD ANALYST:	A.J.MARINO									
ASSESSMENT:										
CRITICALI FLIGHT			CIL ITEM							
	NC A B	c								
NASA [1 /1 IOA [2 /1R] [NA] [NA]] [P] [F]	[NA] [P]	[X] * [X]							
COMPARE [N /N] [N] [N]	[и]	[]							
RECOMMENDATIONS:	(If different from NAS	A)								
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* CIL RETENTION H	* CIL RETENTION RATIONALE: (If applicable) ADEQUATE []									
REMARKS: REF: RI/NASA CII	L OF 12-23-87 AND RI/NASA	INADEQUATE CIL WORKSHE	•							
87.	,									

ASSESSME ASSESSME NASA FME	NT I	D:	2/09/8 MPS-4: 0224-3	225	i							A DATA: SELINE NEW]
SUBSYSTE MDAC ID: ITEM:			MPS 4225 LO2 II	NBC	ARI	FIL	L	VA	LVE	CLC	SIN	G SOLE	10ID	(LV31)
LEAD ANALYST: A.J.MARINO														
ASSESSME	NT:													
CRITICALITY RE						REDUNDANCY SCREENS						CIL		
FLIGHT HDW/FUNC					A B						С		ITEN	1
NASA IOA	[3	/1R /3]	[P NA		[P NA]	[P] NA]		[] *
COMPARE	[/N]	[N :	l	[N]	[и]		[]
RECOMMEN	DATI	ONS:	(If	di	.ffe	erent	1	fro	m NA	SA)				
-	[/]	[•	l	[]	[3	(AI	[DD/DI] ELETE)
* CIL RE	-	'ION 1	RATION	ALE	: ((If a	ΡĮ	pli	cabl	-	ADE	QUATE	[]
		A CI	L WORK	SHE	ET	OF 1	2-	-15	-87.					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	: 2/09/88 MPS-4225A 0224-5	NASA : BASE	DATA: LINE [] NEW [X]
SUBSYSTEM: MDAC ID: ITEM:	MPS 4225 LO2 INBOARD	FILL VALVE CLOSING	SOLENOID (LV31)
LEAD ANALYST:	A.J.MARINO		
ASSESSMENT:			
CRITICAL		NDANCY SCREENS	CIL ITEM
FLIG HDW/F		в с	IIEM
NASA [2 /11 IOA [3 /3	R] [P]] [NA]	[F] [P] [NA]	* [X]
COMPARE [N /N] [N]	[N] [N]	[N]
RECOMMENDATIONS	: (If differ	ent from NASA)	
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* CIL RETENTION	RATIONALE: (I	f applicable) ADEQU INADEQU	•
REMARKS: REF: RI/NASA C	IL OF 12-23-87	AND RI/NASA CIL WO	RKSHEET OF 12-15

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4226	i	NASA DATA: BASELINE [] NEW [X]								
MDAC ID:	MPS 4226 LH2 OUTB	OARD FILL	VALVE O	PENING SOLI	ENOID (LV32)						
LEAD ANALYST: A.J.MARINO											
ASSESSMENT:											
CRITICAL: FLIGH	r	REDUNDANC		c ·······	CIL ITEM						
HDW/FU	NC	À	В	C							
NASA [2 /1R IOA [3 /3] [P] [NA] [F] [NA] [P] NA]	[X] *						
COMPARE [N /N] [и] [и] [и	N]	[и]						
RECOMMENDATIONS:	(If di	fferent f	rom NASA)	•							
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* CIL RETENTION 1	RATIONALE	: (If app	•	ADEQUATE NADEQUATE	[]						
REMARKS: REF: RI/NASA CII 87.	L OF 12-2	3-87 AND	RI/NASA (CIL WORKSHE	EET OF 12-15-						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/10/88 MPS-4227 0270-4		NASA DATA: BASELINE [] NEW [X]					
SUBSYSTEM: MDAC ID: ITEM:	MPS 4227 LH2 OUTBOAR	D FILL VALVE OPENI	NG SOLENOID (LV32)					
LEAD ANALYST:								
ASSESSMENT:								
CRITICAI FLIG		UNDANCY SCREENS	CIL ITEM					
HDW/FC		В С						
NASA [2 /1F IOA [3 /3	[P] [NA]	[F] [P] [NA]	[X] *					
COMPARE [N /N] [N]	[и] [и]	[N]					
RECOMMENDATIONS:	(If diffe	rent from NASA)						
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* CIL RETENTION	RATIONALE: (ADE	QUATE [] QUATE []					
REMARKS: REF: RI/NASA CI	L OF 12-23-8	7 AND RI/NASA CIL	WORKSHEET OF 12-15-					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4228	i	NASA DATA: BASELINE [] NEW [X]								
MDAC ID:	MPS 4228 LH2 OUTE	OARD FILL	VALVE O	PENING SOLE	NOID (LV32)						
LEAD ANALYST:											
ASSESSMENT:					· · · · · · · · · · · · · · · · · · ·						
CRITICAL FLIGH		REDUNDANC	Y SCREEN		CIL ITEM						
HDW/FU	NC	A	В	c	•						
NASA [3 /3 IOA [2 /1R] [NA] [P] [NA] [F] [NA] P]	[X] * [X]						
COMPARE [N /N] [и ј [и] [N]	[и]						
RECOMMENDATIONS:	(If di	fferent f	rom NASA)							
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* CIL RETENTION	RATIONALE	: (If app	·	ADEQUATE NADEQUATE	[]						
REMARKS: THE RI/NASA ANAL IOA CRITICALITY REF: RI/NASA CI 87.	WAS DRIVE	N BY THE	FAILURE	TO REMAIN C	LOSED.						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/10/88 MPS-4228A 0270-5		NASA DATA: BASELINE [] NEW [X]								
SUBSYSTEM: MDAC ID: ITEM:	MPS 4228 LH2 OUTBO	ARD FILL VALVE	L VALVE OPENING SOLENOID (LV32								
LEAD ANALYST:	A.J.MARIN	o									
ASSESSMENT:											
CRITICAL FLIGH		EDUNDANCY SCREI	ens	CIL ITEM							
HDW/FU	_	. В	С								
NASA [3 /1R IOA [2 /1R] [P	[F] [F]	[P] [P]	[X] * [X]							
COMPARE [N /] [] []	[]	[]							
RECOMMENDATIONS:	(If dif	ferent from NAS	SA)								
] [] []	[] (A)	[] DD/DELETE)							
* CIL RETENTION	RATIONALE:	(If applicable	e) ADEQUATE INADEQUATE	į į							
REMARKS:				. .							
THREE FAILURES M REF: RI/NASA CI 87.		-87 AND RI/NAS		EET OF 12-15-							

ASSESSME ASSESSME NASA FME	ENT I	D:	MPS-	4229			NASA DATA: BASELINE [] NEW [X]								
SUBSYSTE MDAC ID:			MPS 4229 LH2		ARD	FILL	. VALV	E CL	OSING	SOL	ENOI	 D ((LV33	3)	
LEAD ANA	LYSI	r:	A.J.	A.J.MARINO											
ASSESSME	ENT:														
				Y SCR				CIL	CIL ITEM						
	111	JW/ FU	NC	•			B ₂₇₀	`]	*					
NASA IOA	[3	3 /3]	7] 7]	IA]	[NA] NA]	[]	NA] NA]	_	[X]	* .		
COMPARE	[/]	ſ]	[]	Ţ]		[]			
RECOMMEN	IDAT]	cons:	(1	f dif	fere	nt f	rom N	ASA)							
	[[/]	[,]	[]	[]	(A)	[DD/D] ELF	ETE)		
* CIL RE	ETENT	NOI7	RATIC	NALE:	(If	app	licab		ADEQU.	ATE	[į			
REMARKS: RI/NASA REF: RI	IND	CATE	S 1/1	. FOR	ABOR	T.	IOA C	ONCUI	RS.				12-1	5-	
87.	-,				•		,								

	: 2/10/88 MPS-4230 0271-4	BASELIN	NASA DATA: BASELINE [] NEW [X]									
SUBSYSTEM: MDAC ID: ITEM:	MPS 4230 LH2 OUTBOARD F	ILL VALVE CLOSING SO	LENOID (LV33)									
LEAD ANALYST:	A.J.MARINO											
ASSESSMENT:												
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM												
HDW/F		ВС	ITEM									
NASA [3 /11 IOA [3 /3	R] [P]] [NA]	[F] [P] [NA] [NA]	[X] *									
COMPARE [/N	ן ן ן	[N] [N]	[N]									
RECOMMENDATIONS	: (If differen	t from NASA)										
[/] []	[] []	[] ADD/DELETE)									
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []												
REMARKS: REF: RI/NASA C	REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 12-15-											

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		nasa data: Baseline New	
MDAC ID:	MPS 4231 LH2 OUTBOARD FILE	. VALVE CLOSING SOLE	NOID (LV33)
LEAD ANALYST:	A.J.MARINO		
ASSESSMENT:			19 V 17 V 18
CRITICAL: FLIGH HDW/FU	r	B C AND AND A	CIL ITEM
NASA [2 /1R IOA [3 /3] [P] [] [NA] [P] [P] NA] [NA]	[X] *
COMPARE [N /N] [4] [и ј [иј	[N]
RECOMMENDATIONS:	(If different f	from NASA)	
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REMARKS:		olicable) ADEQUATE INADEQUATE RI/ÑASA CIL WORKSHE	[]

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4231A	PS-4231A BASELINE [
SUBSYSTEM: MDAC ID: ITEM:	MPS 4231 LH2 OUTBO											
LEAD ANALYST: A.J.MARINO												
ASSESSMENT:												
CRITICAL		EDUNDANCY SCREI	ens	CIL								
FLIGH HDW/FU	_	. В	C	ITEM								
NASA [2 /1R IOA [3 /3] [P	[F] A] [NA]	[P] [NA]	* [X]								
COMPARE [N /N] [N	[и]	[N]	[N]								
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REMARKS: REF: RI/NASA CI 87.	L OF 12-23	-87 AND RI/NASA	A CIL WORKSHI	EET OF 12-15-								

ASSESSME ASSESSME NASA FME	NT I	D:	MPS-	/10/88									
SUBSYSTE MDAC ID:		1	MPS 4232 LH2		RD FI	LL V	/ALVE	OPE	NING	SOLENOI	D (I	.V34)	
LEAD ANA	LYST	:	A.J.	MARIN	0								
ASSESSME	NT:												
	CRIT	ICAL LIGH		R	EDUNI	ANC	SCR	eens		CI IT	L EM		
	HD	W/FU	NC	A		F	3		C				
NASA IOA	[3	/1R /3]	[P [N.] A]	[] []	P] NA]	[P] NA]	[]	*	
COMPARE	[/N]	[N	1	[]	1]	[и ј	Ţ]		
RECOMMEN	DATI	ONS:	(1	f dif	fere	nt fi	com N	ASA)					
~	[/]	[1	[]	[1	[(ADD/	DELE	ITE)	
* CIL RE	TENT	ION	RATIO	NALE:	(If	app]	licab		ADEQU ADEQU	ATE []	. •	
REMARKS: REF: RI 87.		A CI	L OF	12-23	-87 2	AND I	RI/NA	SA C	IL WO	RKSHEET	OF	12-15-	

ASSESSMENT DATE: 2 ASSESSMENT ID: M NASA FMEA #: 0	MPS-4233	NASA DATA: BASELINE [] NEW [X]
MDAC ID: 4	MPS 1233 LH2 INBOARD FILL VALVE	OPENING SOLENOID (LV34)
LEAD ANALYST: A	A.J.MARINO	
ASSESSMENT:		
FLIGHT	redundancy scr	ITEM
HDW/FUNC	C A B	c
NASA [2 /1R] IOA [3 /3]] [P] [F]] [NA] [NA]	[P] [X]* [NA] []
COMPARE [N /N]	[и] [и]	[и] [и]
RECOMMENDATIONS:	(If different from N	ASA)
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* CIL RETENTION RA	ATIONALE: (If applicab	le) ADEQUATE [] INADEQUATE []
REMARKS: REF: RI/NASA CIL 87.	OF 12-23-87 AND RI/NA	SA CIL WORKSHEET OF 12-15-

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SUBSYST MDAC ID ITEM:				42		NBO	DAI	SD.	FII	ĻL	V?	LV	Æ O	PI	ENI	:NG	so	LEN(OI	D	(L	V 34	!)	
LEAD AN	AL	ST	:	A.	J.M	AR]	INC)							-									
ASSESSM	ENT	r:																	÷.	 1			- 5	
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NASA IOA	. [3	/3 /1] R]		[NA P	\]		[N# F]		[NA P]			[x]	*		
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RECOMME	ND#	TI	ons	:	(I£	đ	ļf1	er	ent	: f	rc	m	NAS	A)										
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* CIL R	ETI	ENT	ION	RAT	rion	ALI	E :	(I	fa	pp	oli	lca			ΑĽ	EQ	UAT:		[]			
REMARKS REF: R NOTES.		ias	A C	IL (OF 1	2-2	23-	-87	AN	D	RJ	[/N	ASA	F	ME	A/(CIL	RE	VI	EW	M	EET	ING	

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		A	NASA DATA: BASELINE [] NEW [X]								
	MPS 4234 LH2 INBO										
LEAD ANALYST:	A.J.MARII	МО									
ASSESSMENT:											
CRITICAL FLIGH		REDUNDAN	CY SCREI	ens	CIL ITEM						
HDW/FU	_	A	В	С	IIEM						
NASA [2 /1R IOA [2 /1R] []	P] [P] [F] F]	[P] [P]	[X] * [X]						
COMPARE [/] [] [1	[]	[]						
RECOMMENDATIONS:	(If dia	fferent i	from NAS	SA)							
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* CIL RETENTION	RATIONALE	: (If app	plicable		_						
ADEQUATE [] INADEQUATE []											
REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 12-15- 87.											

ASSESSME	TMS	D	ATE:	2/1	0/88					NASA	DATA	:	
ASSESSMI NASA FMI	ENT EA	II ⊭:):	MPS 027	-423 3-1	5				BAS	ELINE NEW	[x	
SUBSYSTI MDAC ID: ITEM:				MPS 423 LH2	5	OARD	FILL	VALV	E CL	SING	SOLE	NOID	(LV35)
LEAD AN	ALY:	ST	:	A.J	.MAR	INO							
ASSESSMI	ent	:											
	CR		ICAL LIGH			RED	UNDAN	CY SC	REEN	5		CIL	
	1			NC		A		В		C			
NASA IOA	[3	/3 /3]	[NA] NA]	[NA] NA]	[NA]		[] *]
COMPARE	[/]	[]	C]	[1		[]
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REMARKS REF: R		AS	A FM	ŒA/C	CIL R	EVIE	W MEE	TING	NOTE	s.			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #: SUBSYSTEM: MDAC ID: ITEM: LEAD ANALYST:	MPS-4236 0273-4 MPS 4236 LH2 INBOARD	FILL VALV		ATA: INE [] NEW [X] OLENOID (LV35)							
ASSESSMENT:											
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT HDW/FUNC A B C											
NASA [2 /1R IOA [2 /1R] [P]	[F] [F]	[P]	[X] ** **							
COMPARE [/] []	[]	[]	[]							
RECOMMENDATIONS:	(If differe	ent from N	ASA)								
[/] []	[]	[]	· [] ADD/DELETE)							
* CIL RETENTION RA	ATIONALE: (If	f applicabl									
REMARKS: REF: RI/NASA CIL 87.	OF 12-23-87	AND RI/NAS	ADEQUATE INADEQUATE SA CIL WORKS	[] [] HEET OF 12-15-							

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/10/88 MPS-4236 0291-1	5 A	NASA DATA: BASELINE [] NEW [X]							
ITEM:			VALVE C	Losing solen	OID (LV35)					
LEAD ANALYST:	A.J.MAR	INO								
ASSESSMENT:		REDUNDAN	CY SCREE	ens	CIL					
CRITICA FLIG HDW/F	łT	A	В	C	ITEM					
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COMPARE [/	_	ָנ זְ ַנּ]	[]	[]					
RECOMMENDATIONS	: (If	different	from NA	SA)	_					
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* CIL RETENTION	N RATIONA	ALE: (If a	pplicabl	le) ADEQUATE INADEQUATE	[]					
REMARKS: REF: RI/NASA 87.	CIL OF 12	2-23-87 AN	ID RI/NA	SA CIL WORKS	HEET OF 12-9-					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		PS-4236B BASELINE [
MDAC ID:	MPS 4236 LH2 INBOARD FIL	LL VALVE CLOSING SOLE	NOID (LV35)								
LEAD ANALYST:	A.J.MARINO										
ASSESSMENT:											
CRITICAL FLIGH	ITY REDUNDA	ANCY SCREENS	CIL ITEM								
HDW/FU	_	ВС									
NASA [2 /1R IOA [2 /1R] [P]] [P]	[F] [P] [F] [P]	[X] * [X]								
COMPARE [/] []	[] []	[]								
RECOMMENDATIONS:	(If different	from NASA)									
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* CIL RETENTION RATIONALE: (If applicable) ADEQUATE []											
INADEQUATE [] REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 12-9- 87.											

ASSESSMEN	SSESSMENT DATE: 2/10/88 SSESSMENT ID: MPS-4237 IASA FMEA #: 0273-2							NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEM MDAC ID:			MPS 4237 LH2 II	1BC	AR	D FI	LL	VA	LVE	CIA	osi	NG SC	LEN	OID	(LV35)
LEAD ANA	LYST:	:	A.J.M	\RI	NO)									
ASSESSME	NT:														
	FI	LIGH			RE A	DUNE		CY B	SCRE	EENS				CIL	И
	HDV	V/ FUI	NC		A			Ð							
NASA IOA	[3 [3	/1R /3]	[P NA]	[P NA]]	P NA]		[] *
COMPARE	[/N	1	[N]	[N]	[N]		[]
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REMARKS:	/NAS	A CI	L WORK	SHE	EET	OF	12	-15	5-87.						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/10/88 MPS-4237A 0273-5	NASA DATA BASELINE NEW	
	MPS 4237 LH2 INBOARD FILL	. VALVE CLOSING SOLE	NOID (LV35)
LEAD ANALYST:	A.J.MARINO		
ASSESSMENT:			
CRITICAL		CY SCREENS	CIL ITEM
FLIGH HDW/FU	NC A	ВСС	1154
NASA [2 /1R IOA [3 /3	[P] [NA] [F] [P] NA] [NA]	[X] * []
COMPARE [N /N] [N][[и] [и]	[N]
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* CIL RETENTION	RATIONALE: (If ap	oplicable) ADEQUATE INADEQUATE	
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87 AND	RI/NASA CIL WORKSH	EET OF 12-15-

ASSESSME ASSESSME NASA FME	ENT	II):	MPS	-424	0					DATA ELINE NEW	[] K]
SUBSYSTE MDAC ID:				MPS 424 LH2	0	IRC P	UMP 1	VALVE	OPE	NING	SOLEN(OID	(LV36)
LEAD ANA	LYS	T	:	A.J	.MAR	INO							
ASSESSME	ENT:	:										=	
	CRI		[CAL LIGH			REDU	NDAN	CY SCI	REENS			CII	=
	F	IDV	/FU	NC		A		В		C	. r t.		
NASA IOA]	3	/3 /3]	[NA] NA]]	NA]]	NA]		[] *
COMPARE	[/	1	C	1	[]	[]		[]
RECOMMEN	IDA'I	'IC	ons:	(If d	iffer	ent :	from N	NASA))			
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SUBSYSTE MDAC ID: ITEM:			MPS 4241 LH2	RECIR	C PUI	MP V	ALVE	OPEN:	ING SO	OLENG	DID	(LV36)
LEAD ANA	LYSI	?:	A.J.	MARIN	o								
ASSESSME	ENT:												
	F	ICAI LIGH W/FU		R) A			y scr B		C		CII		
NASA IOA	[3	3 /3]	[NZ	A] A]	[]	NA] NA]	[]	NA] NA]		[] *	
COMPARE	[/]	[3	[]	Γ]		[]	
RECOMMEN	ITADI	ONS:	: (1	f dif	fere	nt f	rom N	ASA)					
-	[/]	[]	[]	[]	(A] DELETE	
* CIL RI		NOI	RATIO	ONALE:	(If	app	licab		ADEQUA ADEQUA		[]	
		SA FI	MEA/CI	L REV	IEW	MEET	ING N	OTES	•				

ASSESSME ASSESSME NASA FME	ENT I	D:	MPS-	-4242					NASA DATA BASELINI NEV		
SUBSYSTE MDAC ID: ITEM:					RC PU	MP VA	LVE	OPEN	ING SOLE	10ID (LV3	5)
LEAD ANA	LYST	:	A.J	MARI	NO						
ASSESSME	ENT:										
		ICAL LIGH		1	REDUN	DANCY	SCR	REENS	}	CIL ITEM	
				i	A	В	}		C - 255 - 1 - 1		
NASA IOA	[1	/1 /3]	[]	NA] NA]	[N	A]]	NA] NA]	[X] *	
COMPARE	[N	/N]	ι	1	[]	[]	[N]	
RECOMMEN	(DATI	ons:	(:	If di	ffere	nt fr	om N	IASA)			
-	[3	/3]	[]	NA]	_ [N	A]	[NA]	[D] ADD/DELETI	Ξ)
* CIL RE	ETENT:	ION	RATIO	ONALE	: (If	appl	icab	ole) IN	ADEQUATE ADEQUATE	[]	
REMARKS: THIS FAI REF: RI 87.	LURE	WIL A CI	L BE L OF	1/1	DURIN 3-87	G ABO AND R	RT C	NLY.			-18-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4242A		NASA DATA BASELINE NEW	
MDAC ID:	MPS 4242 LH2 RECIRC	PUMP VALVE OF	PENING SOLEN	OID (LV36)
LEAD ANALYST:	A.J.MARINO			
ASSESSMENT:				
CRITICAL FLIGH		OUNDANCY SCREE	ens	CIL ITEM
HDW/FU	· -	В	C	,
NASA [1 /1 IOA [3 /3] [NA]	[NA] [NA]	[NA] [NA]	[X] *
COMPARE [N /N] []	[]	[]	[N]
RECOMMENDATIONS:	(If diffe	erent from NAS	5 A)	
[3 /3] [NA] [NA]		[D] .DD/DELETE)
* CIL RETENTION	RATIONALE:	(If applicable	e) ADEQUATE INADEQUATE	[]
REMARKS: FAILURE WILL BE REF: RI/NASA CI 87.	1/1 DURING A L OF 12-23-8	AN ABORT ONLY 37 AND RI/NAS	•	

NASA DATA:

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-425)		NASA DATA: BASELINE NEW	
MDAC ID:	MPS 4250 LH2 REP	LENISH VA	LVE OPENII	NG SOLENOII)(LV39)
LEAD ANALYST:	A.J.MAR	INO			
ASSESSMENT:					
CRITICA FLIG		REDUNDAN	CY SCREENS	S	CIL ITEM
HDW/F	INC	A	В	C	112.
NASA [1 /1 IOA [3 /3	1 1 c	NA] [NA] [NA] [NA] NA]	[X] *
COMPARE [N /N] [] [] []	[N]
RECOMMENDATIONS	(If d	ifferent	from NASA)	
[2 /1]	2] [P ₁] [P] [F] (A	[] DD/DELETE)
* CIL RETENTION	RATIONAL	E: (If ap		ADEQUATE NADEQUATE	
REMARKS: FAILURE CAN PREV SYSTEM CAN CAUSI REF: RI/NASA C	MANIFOLI	RUPTURE		FAILURE OF	RELIEF

ASSESSME ASSESSME NASA FME	NT	I	D:	MPS-4	251	L							ASA DASEL		[]	
SUBSYSTEMDAC ID:	M:			MPS 4251 LH2 R	EPI	ŒN	ıısh	VA:	LVE	OP	ENI	NG	SOLE	NOI	D(I	.V3	9)	
LEAD ANA	LY:	ST	:	A.J.M	[AR]	CNC)											
ASSESSME	NT	:																
1		F	LIGH	_		RE	DUNI	DAN		SCR	EEN				CI II	L EM		
]	HD	W/FU	NC		A			В			С						
NASA IOA	[2 3	/1R /3]	[[P NA]	[[F NA]	[P NA]		[[X]	*
COMPARE	[N	/N]	[N]	[N]	[N	1		[N]	
RECOMMEN	DA'	TI	ons:	(If	d:	ifí	ere	nt	fro	om N	ASA)						
-	[/]	[]	[]	[]	(A)	[DD/	'DE] LE	TE)
* CIL RE	TE:	NT	ION	RATION	IALI	E:	(If	ap	pli	cab	-		DEQUA DEQUA		[]	
REMARKS: REF: RI 87.	/N	AS.	A CI	L OF 1	L2-2	23-	-87 /	AND	R	/NA					•		•	8-18-

ASSESSM ASSESSM NASA FM	ENT	I	D:	2/10/8 MPS-42 0230-2	:52	2								ASA DA BASELI N		[]	
SUBSYST				MPS 4252 LH2 RE	P	LEN	ISH	VA	LV	Æ	OPEN	(I)	1G	SOLEN	OII)(I	LV3	19)	
LEAD AN	ALY	ST	:	A.J.MA	R	ENC)												
ASSESSM	ENT	:																	
		F	LIGH				DUNI	AN			SCREE	ens				C]	L	ſ	
	l	HDI	W/ FUI	1C		A			E	5			С						
NASA IOA	[[3 2	/3 /1R]	[NA P]		F	IA]	[NA P	\]]		[x]	*
COMPARE	[N	/N	1	[N]	[N	ī]	[N]		[N]	
RECOMME	NDA'	ri	ONS:	(If	đi	Lff	erer	ıt	fr	0	m NAS	A))						
-	[/]	[]	[1	[]	(AI	[)D/	'DE] :LE	ETE)
* CIL R	•			RATIONA	LI	E :	(If	aŗ	pl	.i	cable		ΑĽ	EQUAT EQUAT	E]	n ent
				EA/CIL	RI	EVI	EW M	EE	TI	N	G NOT	ES	3.	= *					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			NASA DATA: BASELINE NEW	
	MPS 4252 LH2 REPLENIS	SH VALVE OPENIN	G SOLENOII)(LV39)
LEAD ANALYST:	A.J.MARINO			
ASSESSMENT:				
CRITICAL		UNDANCY SCREENS		CIL ITEM
FLIGH HDW/FU		В	С	IILM
NASA [2 /1R IOA [2 /1R	[P]	[F] [[F] [P] P]	[X] * [X]
COMPARE [/] []	[] [1	[]
RECOMMENDATIONS:	(If diffe	rent from NASA)		
] []	[] [] (Al	[] DD/DELETE)
* CIL RETENTION	RATIONALE: (ADEQUATE ADEQUATE	[]
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-8	7 AND RI/NASA C	_	•

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/10/88 MPS-4260 0601-1)		NASA DATA: BASELINE NEW	
MDAC ID:	MPS 4260 LO2 MAN	FOLD REPR	ESS VALVE	E (LV40,LV4	1)
LEAD ANALYST:	A.J.MARI	NO			
ASSESSMENT:					
CRITICALI FLIGHT		REDUNDANC	Y SCREENS		CIL ITEM
	NC	A	В	c	IIEM
NASA [3 /1R IOA [2 /1R] [P] [P] [F] [P] P]	[X] * [X]
COMPARE [N /] [] [и][1	[]
RECOMMENDATIONS:	(If di	fferent f	rom NASA)	l .	
[3 /3	1 C	NA] [NA] [[D] D/DELETE)
* CIL RETENTION I	RATIONALE	: (If app	·	ADEQUATE NADEQUATE	
REMARKS: DUMP AND RELIEF S FAILURE RESULTS I REF: RI/NASA FM	IN DEGRAI	DED DUMP.	NO LOSS	OF CREW OR	

ASSESSME ASSESSME NASA FME	NT	II):	MP	PS-4260A BASELINE [] 601-4 NEW [X]																
SUBSYSTE MDAC ID: ITEM:					60	AN]	[FC	LI	RE	ΡF	RES	SS	VAI	ZVI	E ([LV40,L7	741)			
LEAD ANA	LYS	ST:	:	A.	J.M	AR:	ENC)													
ASSESSME	NT	:																			
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C																					
	I	HDI	/FU	NC			A	-			В				С						
NASA IOA	[1 2	/1 /1R]		[NZ P	\]		[[NZ P	\]		[NA P	A]]	X X]	*	
COMPARE	Į	N	/N]		[N]		[N]		[N	1	[]		
RECOMMEN	DA!	ri	ONS:		(If	đ:	if	fe1	rent	1	fr	om.	NAS	SA))						
-	[/]		[]		[]		[] (2		/D		ETE)	
* CIL RE	TE	NT:	ION ;	RAT	'ION	AL	Ε:	()	[f a	pļ	pl:	ica	able			DEQUATE DEQUATE	[]		
REMARKS: INBOARD REF: RI NOTES.	VA.	LV AS	E (L A CI	V40 L C) I	s 2-:	1/: 23·	l. -87	OU'	TI D	BOZ R:	ARI I/N	V NASZ	ALY A	VE FMI	(LV41) EA/CIL	IS REV	2 'IE	/1 W	R. MEETI	NG

		:	NASA DATA: BASELINE NEW	the state of the s
	MPS 4261 LO2 MANIFO	OLD REPRESS VAI	VE (LV40,LV4	i1)
LEAD ANALYST:	A.J.MARING)		
ASSESSMENT:				n new y
CRITICAL FLIGH		EDUNDANCY SCREE	ins	CIL ITEM
HDW/FU		В	C	11211
NASA [3 /1R IOA [2 /1R] [P] [F]] [P]	[P] [P]	[X] *
COMPARE [N /] [] [N]	[]	[]
RECOMMENDATIONS:	(If diff	ferent from NAS	A)	
[3 /3] [N.	A] [NA]	[NA] (AI	[D] DD/DELETE)
* CIL RETENTION	RATIONALE:	(If applicable	ADEQUATE INADEQUATE	
REMARKS: DUMP AND RELIEF FAILURE RESULTS REF: RI/NASA FM	IN DEGRADEI		TO THE REPR	RESS SYSTEM.

ASSESSME	ASSESSMENT DATE: 2/10/88 ASSESSMENT ID: MPS-4262 NASA FMEA #: 0601-2							NASA DATA: BASELINE [] NEW [X]							
SUBSYSTE MDAC ID:			MPS 4262 LO2 M								LV40,LV	41))		
LEAD ANA	LYST	:	A.J.M	ARIN	O										
ASSESSME	NT:														
CRITICALITY REDUNDANCY S FLIGHT									EENS	}			CL CEN	4	
	P	L	ВС							-					
NASA IOA	[3 [3	/1R /2R]	[E))	[F P]	[[P P]	[X]	*
COMPARE	[/N]	[]	C	N]	[]	[N]	
RECOMMEN	DATI	ons:	(If	dif	fere	nt f	ro	m NA	ASA)						
-	[/]	[]	[]	[] (A	DD,	/DI] ELI	ETE)
* CIL RE	* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []														
REMARKS: REF: RI NOTES.		A CI	L OF 1	. 2-2 3	8-87	AND	RI	/NAS			A/CIL R	•	ΙEV	, ,	MEETING

ASSESSME ASSESSME NASA FME	ENT I	D:	MPS	IPS-4262A					NASA DATA: BASELINE NEW						x]
SUBSYSTE MDAC ID: ITEM:	EM:		MPS	2	[FC)LD	REPI	RES	ss	VAL	VI	E (LV4			ą e i	• • • • • • •
LEAD ANA	LYST	! :	A.J	.MAR	ENC	•										
ASSESSME	ENT:													_		
	F	'ICAL 'LIGH' W/FU	T		RE A		DANG				NS	_			[L [EM	Ī
NASA IOA		/3 /2R]]	NA P]	[NA P	\]]	NA] P]	2	[7] *] :
COMPARE	[/N]	[N]	[N]		[и ј		[]
RECOMMEN	IDATI	ons:	(If d	iff	ere	nt i	fro	m	NAS	A)	ı				
-	[/]	C]	[]		[]	(A	[DD,	/DE] LETE)
* CIL RE	ETENT	'ION	RATI	ONALI	€:	(If	apı	91 i	Ļça	able		ADEQUIADEQU	ATE]
REMARKS: REF: RI		A FM	EA/C	IL R	EVI	EW	MEET	ŢIJ	1G	ron	'ES	5. g _	. 4	1		1 13

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/10/88 MPS-4270 0606-1	NASA DATA: O BASELINE [] NEW [X]							
SUBSYSTEM: MDAC ID: ITEM:	MPS 4270 LH2 MANIFOLD REP	RESS VALVE (LV42,LV	743)						
LEAD ANALYST:	A.J.MARINO								
ASSESSMENT:									
CRITICAL FLIGH	JITY REDUNDAN	CY SCREENS	CIL ITEM						
	INC A	ВС	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2						
NASA [2 /1R IOA [3 /3	[P] [NA] [F] [P] NA] [NA]	[X] * []						
COMPARE [N /N] [и] [и] [и]	[N]						
RECOMMENDATIONS:	(If different	from NASA)							
[3 /3] [AN] [[D] ADD/DELETE)						
* CIL RETENTION	RATIONALE: (If ap	plicable) ADEQUATE INADEQUATE							
REMARKS: DUMP AND RELIEF SYSTEMS ARE NOT REDUNDANT TO THE REPRESS SYSTEM. FAILURE RESULTS IN DEGRADED DUMP. NO LOSS OF CREW OR VEHICLE. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.									

ASSESSME ASSESSME NASA FME	··• ·	2/10/88 MPS-427 NA	1		NASA DATA BASELINE NEW		
SUBSYSTE MDAC ID:		MPS 4271 LH2 MAN	IFOLD 1	REPRESS V	ALVE (LV42,LV	43)	-
LEAD ANA	LYST:	A.J.MAR	INO				
ASSESSME	NT:					. 'e''.	i , _{eq}
	CRITICAL		REDUNI	DANCY SCR	EENS	CIL	
	FLIGH HDW/FU		A	В	C	ITE	M
NASA IOA	[3 /3] [NA]	[] [NA]	[] [AA]	[] *
COMPARE	[N /N] [и ј	[иј	[N]	[]
RECOMMEN	DATIONS:	(If d	iffere	nt from N	ASA)		
-	[3 /3	1	NA]	[NA]	[NA] (A	[.DD/D] ELETE)
* CIL RE	TENTION	RATIONAL	E: (If	applicab	le) ADEQUATE INADEQUATE	Ĺ]
REMARKS:					INADEQUALE	l .	J (a.)
American St.		James and San	6.0		Program for the state of the	± '+	100000000000000000000000000000000000000

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4272		NASA DATA: BASELINE [] NEW [X]								
SUBSYSTEM: MDAC ID: ITEM:	MPS 4272 LH2 MANIF	OLD REPRESS VAL	VE (LV42,LV	43)							
LEAD ANALYST:	A.J.MARIN	0									
ASSESSMENT:											
CRITICAI FLIG		EDUNDANCY SCREE	NS	CIL ITEM							
	INC A	В	С								
NASA [2 /11 IOA [3 /11	R] [P) [F]) [P]	[P] [P]	[] *							
COMPARE [N /) [] [N]	[]	[]							
RECOMMENDATIONS	(If dif	ferent from NAS	A)								
[/] [] []	[]	[] DD/DELETE)							
* CIL RETENTION	* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []										
REMARKS: REGULATOR (PR6) WILL KEEP HELIUM FLOW AT LOW LEVEL. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.											

ASSESSME ASSESSME NASA FME	NT I			4272A		NASA DATA: BASELINE [] NEW [X]							
SUBSYSTE MDAC ID: ITEM:			MPS 4272 LH2) REPRE	ss v	ALVE (LV42,LV	743)	e manger en e				
LEAD ANA	LYST	:	A.J.	MARINO									
ASSESSME	NT:							: .					
		LIGH'	T		NDANCY		A SERVICE CONTRACTOR	CII					
	HD	W/FU	NC _	A	В		C						
NASA IOA	[3 [3	/3 /1R]	[NA] [P]	[N [P	A]	[NA] [P]	[] *]				
COMPARE	[/N	1	[14]	[N]	[N]	[]				
RECOMMEN	DATI	ons:	(1	f differ	ent fr	om N	ASA)						
-	[/]	[]	ſ)	[]	[DD/E] ELETE)				
REMARKS:				NALE: (1	. • •		ADEQUATE INADEQUATE	Ī]				
REF: RI	./NAS	a FM	EA/CI	L REVIEW	MEETI	NG N	OTES.	4 1					

ASSESSME ASSESSME NASA FME	NT ID:		1280	NASA DATA: BASELINE [] NEW [X]								
SUBSYSTEMDAC ID: ITEM: (LV46)	M:	MPS 4280 LO2 I	FEED DISC	CONNECT VA	LVE OPENING	SOLEN	IOID					
LEAD ANA	LYST:	A.J.	MARINO									
ASSESSME	NT:											
,	FLI	ALITY GHT FUNC	REDUN A	idancy scr B	EENS C	CII						
NASA IOA	[3 /	3] 3]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[] *					
COMPARE	[/	']	[]	[]	[]	[]					
RECOMMEN	DATION	is: (I	f differe	ent from N	ASA)							
-	[/	']	[]	[]	[]	[(ADD/I] DELETE					
REMARKS:			·	f applicat MEETING N	ADEQUATE INADEQUATE]					
REF: RI	/ NADA	LUEW/ CT	D VEATEM	HEETING N	OIDD.							

ASSESSMENT DATE: 2/10/88 ASSESSMENT ID: MPS-4281 NASA FMEA #: 0219-4								NASA DATA: BASELINE [] NEW [X]							
SUBSYSTE MDAC ID: ITEM: (LV46)				4	MPS 4281 LO2 FE	EED	DISCO	NNEC	T VAL	VE O	PENING S	OLEN	OID		
LEAD ANA	ALYST: A.J.MARINO														
ASSESSME	NT	:													
CRITICALITY FLIGHT						R	EDUND	ANCY	SCRE	ENS		CIL			
The state of the s					A		В		С	* -	TTE	TEM			
NASA IOA	[3 2	/1 /1	R R]]	[P]	[F]	[P]	[X [X] .*		
COMPARE	[N	/	•]	[]	[]	[1	[]		
RECOMMEN	DA'	ri	ONS	:	(If	dif	feren	t fr	om NA	SA)					
-	[/	•)	[]	[1	Ţ] (A	[DD/D1] ELETE)		
* CIL RE	TEI	NT:	ION	R	ATIONA	LE:	(If a	appl	icabl	A	DEQUATE DEQUATE	[]		
REF: RI	/N2	AS	A C	IL	OF 12	2-23	-87 Al	ND R	I/NAS	A CI	L WORKSH	EET (OF 12-11-		

ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [] NEW [X]								
SUBSYSTEM: MDAC ID: ITEM: (LV46)	MPS 4281 LO2 FEED DISCONNECT VALVE	OPENING SOLENOID								
LEAD ANALYST:	A.J.MARINO									
ASSESSMENT:										
CRITICA FLIG	S CIL ITEM C									
·	UNC A B									
NASA [1 /1 IOA [2 /1] [NA] [NA] [R] [P] [F] [NA] [X] * P] [X]								
COMPARE [N /N] [и] [и] [и] []								
RECOMMENDATIONS	: (If different from NASA)								
. [/] [] [] [] [] (ADD/DELETE)								
	* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []									
REMARKS: REF: RI/NASA C 87.	IL OF 12-23-87 AND RI/NASA	CIL WORKSHEET OF 12-14-								

ASSESSME ASSESSME NASA FME	NT :	ID:		-4281B				NASA DATA: BASELINE [] NEW [X]						
SUBSYSTE MDAC ID: ITEM: (LV46)			MPS 428 LO2		ISCONN	OPENING	SOLENOID							
LEAD ANA	LYS	r:	A.J	.MARINO										
ASSESSME	NT:								·					
		TICAL FLIGH		RE	DUNDAN	CY SCR	REENS	.	CIL ITEM					
	H	DW/FU	NC	A		В		С						
NASA IOA	[:	1 /1 2 /1R]	[NA [P	.] [NA] F]]	NA] P]	[X] · *. [X]					
COMPARE	[]	N / N]	[N] [N]	[и]	. 1					
RECOMMEN	DAT:	ions:	(:	If diff	erent	from N	IASA)							
-	[/]	[] []	[] ([] ADD/DELETE)					
* CIL RE		rion	RATI(ONALE:	(If ap	plicab	Ť	ADEQUATE IADEQUATE	• •					
REMARKS:		SA CI	L OF	12-23-	87 AND	RI/NA	SA C	CIL WORKS	HEET OF 12-14-					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/10/88 MPS-428 0219-2			NASA DATA BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM: (LV46)	MPS 4282 LO2 FEE	D DISCONNI	OPENING S	OLENOID	
LEAD ANALYST:	A.J.MAR	NO			
ASSESSMENT:					
CRITICAL FLIGH	T	REDUNDANO		s c	CIL ITEM
HDW/FU		A	В	_	
NASA [1 /1 IOA [3 /3] [NA] [NA] [NA] [NA] [NA] NA]	[X] * []
COMPARE [N /N] [] [] []	[N]
RECOMMENDATIONS:	(If d	lifferent :	from NASA)	
[2 /1R	1 [P] [F] [P] (A	[] DD/DELETE)
* CIL RETENTION	RATIONAL	E: (If app	plicable)		
			I	ADEQUATE NADEQUATE	[]
REMARKS: THE VALVE HAS A REF: RI/NASA CI			CLOSURE	DEVICE.	

ASSESSME ASSESSME NASA FME	NT I	D:	2/10/8 MPS-42 0219-5	82	A			NASA DATA: BASELINE [] NEW [X]					
SUBSYSTE MDAC ID: ITEM: (LV46)			MPS 4282 LO2 FE	ED	DISCO	NNE	CT VAI	VE	OPENING S	OLEN	OID		
LEAD ANA	LYST	! :	A.J.MA	RI	NO								
ASSESSME	NT:												
		ICAL]	REDUNI	ANC	SCRE	EENS		CIL			
	HD	W/FUI	1C	i	A	1	В		С				
NASA IOA		/1R /3]	[]	P] NA]	[]	F] NA]	[P] NA]	x]]] *·]		
COMPARE	[/N]	[]	ו א	[]	N]	[n]	[N]		
RECOMMEN	DATI	ONS:	(If	di :	fferer	nt fi	rom NA	SA)	ı				
-	[/]	[]	נ]	[] (A	[DD/D] ELETE)		
* CIL RE		I NOI	RATIONA	LE	: (If	app:	licabl		ADEQUATE NADEQUATE	[]		
REMARKS: REF: RI		A CI	L OF 12	-2	3-87.						·		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		BASELI	NASA DATA: BASELINE [] NEW [X]				
SUBSYSTEM: MDAC ID: ITEM: (LV47)	MPS 4290 LO2 FEED DISC	ONNECT VALVE CLOSING	SOLENOID				
LEAD ANALYST:	A.J.MARINO						
ASSESSMENT:							
CRITICAL FLIGH HDW/FU	T	DANCY SCREENS B C	CIL ITEM				
NASA [2 /1R IOA [3 /3	[P]] [NA]	[F] [P] [NA]	[X] * []				
COMPARE [N /N] [N]	[и] [и]	[И]				
RECOMMENDATIONS:	(If differe	ent from NASA)					
. [/] []	[] []	[] (ADD/DELETE)				
* CIL RETENTION REMARKS:	RATIONALE: (If	applicable) ADEQUAT INADEQUAT					
	L OF 12-23-87	AND RI/NASA CIL WORK	SHEET OF 12-11-				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4291	NASA DATA: BASELINE [] NEW [X]						
SUBSYSTEM: MDAC ID: ITEM: (LV47)	MPS 4291 LO2 FEED DISCO		LOSING SOLENOID					
LEAD ANALYST:	A.J.MARINO							
ASSESSMENT:								
FLIGH			CIL ITEM					
HDW/FU	NC A	в с						
NASA [2 /1R IOA [3 /3] [P]] [NA]	[F] [P [NA]] [X] ; * . A] []					
COMPARE [N /N] [N]	[N] [N] [N]					
RECOMMENDATIONS:	(If differen	t from NASA)						
- [/] []	[] [] [] (ADD/DELETE)					
* CIL RETENTION	RATIONALE: (If a	Al	DEQUATE [] DEQUATE []					
REF: RI/NASA CI: 87.	L OF 12-23-87 A	ND RI/NASA CII	L WORKSHEET OF 12-11-					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/10/88 MPS-429 0220-2			NASA DATA BASELINE NEW			
SUBSYSTEM: MDAC ID: ITEM: (LV47)	MPS 4292 LO2 FEE	D DISCONN	ECT VALVE	CLOSING S	OLENOID		
LEAD ANALYST:	A.J.MAR	INO					
ASSESSMENT:							
CRITICAL FLIGH HDW/FU	łT	REDUNDAN	CY SCREEN	s C	CIL ITEM		
NASA [3 /3 IOA [3 /3] [NA] [NA] [NA] NA]	* [] *		
COMPARE [/] [] [] [1	[]		
RECOMMENDATIONS	: (If d	ifferent	from NASA)			
. [/] [] [] [) (A	[.DD/DELETE		
* CIL RETENTION REMARKS: REF: RI/NASA FI		, -	I	ADEQUATE NADEQUATE	[]		

ASSESSMEN' ASSESSMEN' NASA FMEA	T ID:	2/10/88 MPS-429 0220-4			BASELINE	NASA DATA: BASELINE [] NEW [X]			
SUBSYSTEM MDAC ID: ITEM: (LV47)		MPS 4292 LO2 FEE	D DISCON	NECT VALV	E CLOSING SO	OLENOID			
LEAD ANAL	YST:	A.J.MAR	INO						
ASSESSMENT:									
C	RITICAL: FLIGHT HDW/FUI	r	REDUNDA A	NCY SCREE	ns C	CIL ITEM			
	11011/101		••	~		•			
NASA IOĀ	[3 /1R [3 /3] [P] NA]	[F] [NA]	[P] [NA]	[X] *			
COMPARE	[/N] [и ј	ן א ן	[N]	[א]			
RECOMMEND	ATIONS:	(If d	ifferent	from NAS	A)				
-	[/] [1	[]	[] (Al	[] DD/DELETE)			
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE [] REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 12-11-									
87.									

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/11/88 MPS-4300 0217-1	o		NASA DATA BASELINE NEW	[]	
SUBSYSTEM: MDAC ID: ITEM: (LV48)	MPS 4300 LH2 FEEI	D DISCONNE	CT VALVE	OPENING S	OLENOID	
LEAD ANALYST:	A.J.MAR	INO				
ASSESSMENT:						
CRITICAL FLIGH HDW/FU	T	REDUNDANC A	s c	CIL ITEM		
NASA [3 /3 IOA [3 /3		NA] [NA] [NA] [NA] [NA] NA]	[] *	
COMPARE [/] [] [] []	[]	
RECOMMENDATIONS:	(If d	ifferent i	from NASA)		
- [/] [] [] [] (A	[] DD/DELET	E
* CIL RETENTION REMARKS: REF: RI/NASA FM				ADEQUATE NADEQUATE	[]	

ASSESSME ASSESSME NASA FME	ENT I	D:	MPS-4	MPS-4301 BASELINE							
SUBSYSTE MDAC ID: ITEM: (LV48)			MPS 4301 LH2	·							D.
LEAD ANA	LEAD ANALYST: A.J.MARINO										
ASSESSME	ENT:										
CRITICALITY FLIGHT				R	EDUNI	DANCY	SCI	REENS	. 4	CIL ITEM	
		W/FU		A		В		С		TIEM	
NASA IOA	[3	/1R /1R]	[P]	[F]	[P]	[X]	*
COMPARE	[N	1 /]	[, 1	[]	[]	[]	
RECOMMEN	DAT]	ons:	(I	f dif	ferer	nt fr	om 1	NASA)			n es
•	[/	1	[]	[]	[1	[]	ETE)
	* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []										
REMARKS: IOA DID NOT ACCOUNT FOR THE LATCH. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 12-10-87.											

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	-,,,	NASA DATA: BASELINE [] NEW [X]						
SUBSYSTEM: MDAC ID: ITEM: (LV48)	MPS 4301 LH2 FEED DISCONNECT VALVE	OPENING SOLENOID						
LEAD ANALYST:	LYST: A.J.MARINO							
ASSESSMENT:								
CRITICAI FLIGH	 	G CIL ITEM						
HDW/FU		c						
NASA [1 /1 IOA [2 /1] [NA] [NA] [R] [P] [F] [NA] [X] * P] [X]						
COMPARE [N /N] [N] [N] [иј []						
RECOMMENDATIONS	(If different from NASA)) .						
. [/] [] [] [] [] (ADD/DELETE)						
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []								
INADEQUATE [] REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 12-14- 87.								

ASSESSMEN ASSESSMEN NASA FMEA	T I		MPS-43	2/11/88 MPS-4301B 0290-2					NASA DATA: BASELIÑE [] NEW [X]			
SUBSYSTEM MDAC ID: ITEM: (LV48)	1:		MPS 4301 LH2 FE	EĐ	DISCO	NNE	CT VAI	LVE	OPENING S	SOLENOID		
LEAD ANAI	LYST	:	A.J.MARINO									
ASSESSMENT:												
CRITICALITY FLIGHT HDW/FUNC			1			Y SCRI	EENS	c c	CIL ITEM			
NASA IOA	[1	/1 /1R]	[]	NA]	[NA] F]]	NA] P]	[X] **		
COMPARE	[N	/N	J ,	[1	1]	[N ,],,	[N]	[] ····		
RECOMMEN	DATI	ons:	(If	di	fferen	t f	rom NA	ASA)		e,		
-	[/]	[]	[]	[] (2	[] ADD/DELETE)		
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE [] REMARKS:												
REF: RI	/NAS	A CI	L OF 12	2-2:	3-87 A	MD	RI/NAS	SA (CIL WORKS	HEET OF 12-14-		

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/11/88 MPS-430 0217-2						
	MPS 4302 LH2 FEE	D DISCONN	ECT VALVE	OPENING S	OLENOID		
LEAD ANALYST:	A.J.MAR	INO					
ASSESSMENT:							
CRITICAL FLIGH HDW/FU	T	REDUNDAN	CY SCREEN	rs C	CIL ITEM		
·			_	-			
NASA [1 /1 IOA [3 /3] [NA] [NA] [NA] [NA] [NA] NA]	[X] * []		
COMPARE [N /N] [] [] [1	[N]		
RECOMMENDATIONS:	(If d	lifferent	from NASA	A)			
[2 /1R) [P] [F] [P] (A	[] DD/DELETE;		
* CIL RETENTION	RATIONAL	E: (If ag		ADEQUATE	[]		
REMARKS: THE VALVE HAS A SEPARATION. REF: RI/NASA CI					•		

ASSESSME ASSESSME NASA FME	NT I	D:	•	-4302	2A		NASA DATA: BASELINE [] NEW [X]						
SUBSYSTEMDAC ID: ITEM: (LV48)	M:		MPS 4302 LH2		o Disc	ONNE	CT VA	LVE	OPENING	SOLENOID			
LEAD ANA	LYST	:	A.J	MAR]	NO								
ASSESSME	NT:												
CRITICALITY FLIGHT					REDUN			REENS		CIL ITEM			
	HD	W/FU	NC		A		В		С				
NASA IOA	[3	/1R /3]]	P] NA]	[[F] NA]]	P] NA]	[X] .*			
COMPARE	Ç	/N]	ſ	ן א	[[ַ א	[и ј	[N]			
RECOMMEN	DATI	ons:	(1	If di	ffere	nt f	rom N	IASA))				
-	[/	1	. [, 1	[]	[]	[] (ADD/DELETE)			
* CIL RE	TENT	ION 1	RATI(ONALI	E: (If	app	licab	•	ADEQUATE VADEQUATE	E []			
REMARKS: REF: RI	/NAS	A CI	L OF	12-2	3-87.								

ASSESSMENT DATE: 2/11/88 ASSESSMENT ID: MPS-4310 NASA FMEA #: 0218-1 NASA FMEA #: 0218-1 NASA FMEA #: 0218-1								
SUBSYSTEM: MPS MDAC ID: 4310 ITEM: LH2 FEED DISCONNECT VALVE CLOSING SOLENOID (LV49)								
LEAD ANALYST: A.J.MARINO								
ASSESSMENT:								
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C								
NASA [2/1R] [P] [F] [Y]* IOA [3/3] [NA] [NA] [NA] []								
COMPARE [N /N] [N] [N] [N]								
RECOMMENDATIONS: (If different from NASA)								
[/] [] [] (ADD/DELETE)								
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []								
REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 12-87.	11-							

ASSESSME ASSESSME NASA FME	NT	ID:	2/11/ MPS-4 0218-	311			NASA <u>DATA:</u> BASELINE [] NEW [X]							
SUBSYSTE MDAC ID: ITEM: (LV49)			MPS 4311 LH2 F	EED	DISC	ONNEC	T VA	LVE (closi	NG S	OLEN	OID		
LEAD ANA	ANALYST: A.J.MARINO													
ASSESSME	NT:													
		TICAL. FLIGHT	r	F		DANCY B		EENS		·· * Æ. ·	CII			
NASA IOA		3 /1R 3 /3				[F] [A]	[F	P] NA]		[X	<u> </u>		
COMPARE	[/N]	[N]	[N]	[]	1]		[N	7]		
RECOMMEN	DAT	ions:	(If	dif	fere	nt fr	om N	ASA)						
•	[/]	[]	[]	[]	(A)	[DD/D] ELETE)		
* CIL RE		TION 1	RATION	IALE:	(If	appl	icab	P		JATE JATE]		
REF: RI	/NA	SA CI	L OF 1	.2-23	-87.									

ASSESSME ASSESSME NASA FME	NT ID:	MPS	5-4312	2/11/88 NASA DATA: MPS-4312 BASELINE [] 0218-2 NEW [X]								
SUBSYSTE MDAC ID: ITEM: (LV49)	M:	MPS 43: LH2	_	DISC	ONNEC	T VA	LVE C	LOSIN	G SOI	LENC	OID	
LEAD ANA	LYST:	Α.:	J.MARI	10								
ASSESSME	NT:											
	FL	CALITY IGHT FUNC			DANCY E		EENS C	:	-	CIL [TEM	ſ	
NASA IOA	[3 /	/3] /3]	[]	NA] NA]	[N []	IA] IA]	[N	IA] IA]		[] *	
COMPARE	[/	/]	[]	[]	[]	!	[]	
RECOMMEN	DATIO	NS:	(If di	ffere	nt fr	om N	ASA)					
-	[/	/]	[]	[]	[]	(AD)	[D/DE] ELETE	
* CIL RE				•			INA	DEQUA		[]	
REF: RI	/NASA	rmea/	CIL RE	ATCM	MEELI	TIG N	OIES.					

ASSESSMENT ID: NASA FMEA #:			NASA DATA: BASELINE NEW	E [] W [X]					
	MPS 4312 LH2 FEED DISCON	NECT VALVE	VALVE CLOSING SOLENOID						
LEAD ANALYST:	A.J.MARINO								
ASSESSMENT:									
CRITICAL FLIGH HDW/FU	T	NCY SCREENS	C	CIL ITEM					
·] [P]] [NA]	[F] [NA] [P] NA]	[X]] *					
COMPARE [/N] [N]	ן און יין	N]	[N].					
RECOMMENDATIONS:	(If different	from NASA)		***					
. [/] []	[] [] (AI	[] DD/DELETE)					
* CIL RETENTION REMARKS: REF: RI/NASA CI 87.	RATIONALE: (If a	IN	ADEQUATE ADEQUATE	[] [] EET OF 12-11-					

ASSESSMENT DATE: 2/11/88 ASSESSMENT ID: MPS-4320 NASA FMEA #: 0215-1												SA DATA ASELINI NEV		x]			
SUBSYSTEMDAC ID:					MPS 4320 LH2 RECIRC DI				SCOI	NNE	CT	VAL	/E (OPENIN	G S	OLI	ENO	ID
LEAD ANA	ALYS	ST:	:	A.	J.MA	AR.	INO	ı										
ASSESSMI	ENT	:																
		FI	CAI LIGH I/FU				RE A	DUNI	OAN	CY B	sc	REENS	s C			IL TEN	4	
NASA IOA	[3	/3 /3]		[NA NA	.]	[NA NA	.]	[NA NA]]	[]	*
COMPARE	[/]		[]	[]	[]	[]	
RECOMME	NDA'	ric	ons:		(If	d:	iff	erei	nt :	fro	m	nasa))					
-	[/]		[]	[]	[] (.] ADD	/D1] ELE	TE
* CIL RI		NT]	ON	RAT:	ION	AL	E:	(If	ap	pli	.ca			EQUATE EQUATE]	
		AS?	A FM	ŒA/	CIL	R	EVI	EW I	MEE'	TIN	īG	NOTE	5.					

ASSESSMENT ASSESSMENT NASA FMEA	ID: MPS-	4321		NASA DA BASELI N	
SUBSYSTEM: MDAC ID: ITEM: (LV50)	MPS 4321 LH2		SCONNECT V	rate openi	NG SOLENOID
LEAD ANALYS	ST: A.J.	MARINO			
ASSESSMENT	·				
	ITICALITY FLIGHT HDW/FUNC		DANCY SCRI B	eens C	CIL ITEM
NASA [IOA [2 /1R] 3 /3]	[P] [NA]	[F] [NA]	[P] [NA]	[X] *
COMPARE [n /n]	[и]	[N]	[и]	[N]
RECOMMENDAT	rions: (I	f differe	nt from NA	ASA)	
- [3 /1R]	[P]	[F]	[P]	[] (ADD/DELETE)
* CIL RETER	NTION RATIO	NALE: (If	applicabl	le) ADEQUAT	E []
	·			INADEQUAT	
	ILURE IS RE A 0405-2.	QUIRED TO		SCONNECT VA	LVE WILL CLOSE. OR VEHICLE.

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-432	2 BASELI	NASA DATA: BASELINE [] NEW [X]								
MDAC ID:	MPS 4322 LH2 REC										
LEAD ANALYST:											
ASSESSMENT:											
FLIGH	IT	REDUNDANCY SCREENS A B C	CIL ITEM								
	INC	-									
NASA [1 /1 IOA [1 /1] [NA] [NA] [NA] NA] [NA] [NA]	[X] * [X]								
COMPARE [/] [] [] []	[]								
RECOMMENDATIONS	(If d	ifferent from NASA)									
[2 /1]	?] [P] [F] [P]	[] (ADD/DELETE)								
* CIL RETENTION	RATIONAL	E: (If applicable) ADEQUA' INADEQUA'	re []								
REMARKS: MECHANICAL BACK REF: RI/NASA C	JP DEVICE IL OF 12-	EXISTS FOR CLOSURE AT ME 23-87 AND RI/NASA CIL WOR	co.								

ASSESSMEN ASSESSMEN NASA FMEA	T ID:	MPS-4330	NASA DATA: BASELINE NEW	[X]						
SUBSYSTEM MDAC ID: ITEM; (LV51)		MPS 4330 LH2 RECI	RC DISCON	E CLOSING	SOLENOID					
LEAD ANAL	YST:	A.J.MARI	NO							
ASSESSMEN	T:									
c	CIL									
	FLIGHT HDW/FUN	1C	A	C						
NASA IOA	[3 /3 [1 /1	1 [NA] [NA] [NA] [NA] [NA] NA]	[X] *				
COMPARE	[N /N] [] [] []	[N]				
RECOMMEND	ATIONS:	(If di	fferent f	rom NASA)						
-	[2 /1R) (P] [F] [P] (AD	[A] D/DELETE)				
* CIL RET	* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []									
REMARKS: THE DISCONNECT VALVE HAS A BACKUP MECHANICAL CLOSURE DEVICE. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 11-10-87.										

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4330A		NASA DATA: BASELINE NEW			
SUBSYSTEM: MDAC ID: ITEM: (LV51)	MPS 4330 LH2 RECIRC	DISCONNECT VAL	VE CLOSING	SOLENOID		
LEAD ANALYST:	A.J.MARINO					
ASSESSMENT:						
CRITICAL FLIGH		OUNDANCY SCREEN	S	CIL ITEM		
HDW/FU		В	С			
NASA [1 /1 IOA [1 /1] [NA]	[AA] [] [AN] [NA] NA]	[X] *		
COMPARE [/] [] [] []	[]		
RECOMMENDATIONS:	(If diffe	erent from NASA)			
. [/	1 [] [] [] (AI	[DD/DELETE)		
* CIL RETENTION	RATIONALE:	•	ADEQUATE NADEQUATE	[]		
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-	37 AND RI/NASA	CIL WORKSHI	EET OF 11-10-		

ASSESSMI ASSESSMI NASA FMI	ENT I	D:	MPS-4	2/11/88 NASA DATA MPS-4330B BASELINE 0290-2 NEW						[]	
SUBSYSTEMDAC ID: ITEM: (LV51)	:		MPS 4330 LH2 R	ECI	NECT V	E CLOSING	S	OLE	NOID				
LEAD ANA	ALYST	:	A.J.M	A.J.MARINO									
ASSESSMI	ENT:												
	CRIT	ICAL: LIGH		TY REDUNDANCY SCREENS							CIL ITEM		
		W/FU	NC		A		В		С				
NASA IOA	•	/1 /1]	[NA] NA]	[NA] NA]	[NA] NA]	[X X] ₁ .*	
COMPARE	[/	1	Ţ	1	[.]	[]	[]	
RECOMMEN	DATI	ons:	(If	di	fferent	: 1	from NA	SA)				
-	[/	1	[]	[]	[] (Al] ,ac] LETE)	
* CIL RI	* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []												
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ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/11/88 MPS-4331 0216-5		NASA DATA: BASELINE [] NEW [X]								
MDAC ID:	MPS 4331 LH2 RECI	RC DISCON	INECT VA	LVE CLOSING	SOLENOID						
LEAD ANALYST:	A.J.MARI	NO									
ASSESSMENT:											
CRITICAL FLIGH HDW/FU			SY SCREE	ns C	CIL ITEM						
NASA [2 /1R IOA [1 /1		P] [NA] [F] NA]	[P] [NA]	[X] *						
COMPARE [N /N	1 [и] [и]	[и]	[]						
RECOMMENDATIONS:	(If di	fferent :	From NAS	A)							
_ [/] [] [1	[] (A)	[] DD/DELETE)						
* CIL RETENTION :		,	•) ADEQUATE INADEQUATE							
REF: RI/NASA CI	L OF 12-2	3-87.									

ASSESSMENT DATE: 2/11/88 ASSESSMENT ID: MPS-4332 NASA FMEA #: 0216-2							NASA DATA: BASELINE [] NEW [X]							
SUBSYSTE MDAC ID: ITEM: (LV51)	M:			MPS 4332 LH2		C DI	SCONN	ECT	V <u>A</u> ĻV	E CLO	SING	soi	LENOID	
LEAD ANA	LYS	T:		A.J.	MARIN	10								
ASSESSME	NT:													
		FL	IGH	ITY T NC			DANCY E			c ⁱⁿ	·	CII ITI		
NASA IOA	[3	/3 /3]	[N	IA] IA]	[N	IA] IA]	[NA] NA]		[* · · ·] *	
COMPARE	[/]	1]	[]	[]		[] e e e e e e	
RECOMMEN	DAT	'IO	NS:	()	f dif	fere	nt fr	om N	ASA)					
-	[/]	[]	[]	[]	(Al] DELETE)	
* CIL RE	TEN	TI	ON	RATIO	NALE:	(If	appl	icab.	•	ADEQU.	ATE	[
	/NA	SA	FM	EA/C	L REV	/IEW	MEETI	NG N	OTES	•				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4332A	NASA DATA BASELINE NEW	
MDAC ID:	MPS 4332 LH2 RECIRC DISCOR	NNECT VALVE CLOSING	SOLENOID
LEAD ANALYST:	A.J.MARINO		
ASSESSMENT:			
CRITICAL FLIGH HDW/FUI	r	CY SCREENS B C	CIL ITEM
NASA [2 /1R IOA [3 /3] [] [] [NA] [] [] NA] [NA]	[X] *
COMPARE [N /N] [N][и ј [иј	[N]
RECOMMENDATIONS:	(If different a	from NASA)	
[3 /1R] [P] [F] [P] (A	[] DD/DELETE)
* CIL RETENTION 1	RATIONALE: (If app	plicable) ADEQUATE INADEQUATE	[]
	IS REQUIRED TO CAU	THE DISCONNECT VALV	E WILL CLOSE.

ASSESSME ASSESSME NASA FME	MP	S-4340)				NASA D BASEL	ATA: INE [NEW [>]			
SUBSYSTE MDAC ID: ITEM: SOLENOID			MP 43 LH	40	P VALVE	OPENIN	IG					
LEAD ANALYST: A.J.MARINO												
ASSESSME	NT:										y w	
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM												
					A	1	3		C			
NASA IOA	[:	3 /3 3 /3	3] 3]]	NA] NA]	[] []	NA] NA]	[[NA] NA]	[] *]	:
COMPARE	[/]	[J	[]	[3	[]	
RECOMMEN	DAT:	IONS	5 :	(If di	ffere	ent f	com N	IASA))			
-	[/]	[]	(1	[]	[(ADD/I) ELET	E)
* CIL RE			N RAT	IONALE	: (If	app:	Licab		ADEQUA	TE [TE []	
RI/NASA	REMARKS: RI/NASA DOES NOT SHOW A 1/1 CRITICALITY FOR ABORT. REF: RI/NASA FMEA/CIL REVIEW MEETING NOTES.											

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/12/88 MPS-4340A 0290-1	IPS-4340A BASELINE [] 1290-1 NEW [X] IPS							
	MPS 4340 LH2 FEED RTLS								
LEAD ANALYST:	A.J.MARINO								
ASSESSMENT:									
CRITICAL FLIGH HDW/FU	T	ANCY SCREENS B C	CIL ITEM						
NASA [1 /1 IOA [3 /3] [NA]] [NA]	[NA] [NA] [NA] [NA]	* [X]						
COMPARE [N /N] []	[] []	[N]						
RECOMMENDATIONS:	(If differen	t from NASA)							
. [/] []	[] []	[] (ADD/DELETE)						
* CIL RETENTION	RATIONALE: (If	applicable) ADEQUATI INADEQUATI							
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87 A	ND RI/NASA CIL WORKS	SHEET OF 12-14-						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4340	MPS-4340B BASELINE [
SUBSYSTEM: MDAC ID: ITEM: SOLENOID (LV72)	MPS 4340 LH2 FEEI	O RTLS IN	BOARD DU	MP VALVE OP	ENING					
LEAD ANALYST:	A.J.MAR	INO								
ASSESSMENT:				-						
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C										
nuw/ FOI	,iC	A	В	C						
NASA [1 /1 IOA [3 /3] [NA] [NA] NA]	[NA] [NA]	[X] * []					
COMPARE [N /N	ַ .	,] , []	[]	[N].					
RECOMMENDATIONS:	(If di	ifferent	from NAS	A)						
. [/	ָז נ) (1	[] (AI	[] DD/DELETE)					
* CIL RETENTION 1	RATIONALE	E: (If ap	_) ADEQUATE INADEQUATE						
REMARKS: REF: RI/NASA CI	L OF 12-2	23-87 AND	RI/NASA	CIL WORKSHI	EET OF 12-14-					

ASSESSME ASSESSME NASA FME	NT ID:	MPS-43	41	NASA DATA: BASELINE [] NEW [X]							
SUBSYSTE MDAC ID: ITEM: SOLENOID		MPS 4341 LH2 FE	ED RTLS	INBOARD 1	OUMP VALVE (OPENING					
LEAD ANA	LYST:	A.J.MA	RINO								
ASSESSME	NT:										
	CRITICAL FLIGH		REDUNI	DANCY SCR	EENS	CIL ITEM					
		NC	A	В	С						
NASA IOA	[3 /3 [3 /3]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[] *					
COMPARE	[/]	[]	[]	[]	[]					
RECOMMEN	DATIONS:	(If	differe	nt from N	ASA)						
-	[/	1	[]	[]	[]	[] (ADD/DELETE)					
* CIL RE	TENTION	RATIONA	LE: (If	applicab		.					
					ADEQUAT INADEQUAT						
REMARKS: THE RI/N REF: RI	IASA ANAI	YSIS DO	ES NOT S	SHOW A 1/ MEETING N	1 CRITICALI OTES.	TY FOR ABORT					

ASSESSME ASSESSME NASA FME	NT I	D:	2/12/0 MPS-4: 0245-	342		NASA DATA: BASELINE [] NEW [X]							
SUBSYSTE MDAC ID: ITEM: SOLENOID			MPS 4342 LH2 F	EED I	RTLS	INBC	ARD	DUMP	VALVE O	PENING			
LEAD ANA	LYST	r:	A.J.M	ARIN)								
ASSESSME	NT:												
	I	rical FLIGH DW/FUI		RI A		ANCY E		REENS C	in in the second se	CIL ITEM			
NASA IOA		2 /1R 2 /1R]	[P]	[F]	[P]	[X] *			
COMPARE	[/	1	[]	[N]	[]	[]			
RECOMMEN	DAT]	cons:	(If	dif	feren	t fr	om 1	NASA)					
-	[/]	[]	[]	[] ([] ADD/DELETE)			
* CIL RE	ž	 -	e de la companya de l					A INA	DEQUATE DEQUATE	[]			
		SA FMI	EA/CIL	REV	CEW M	EETI	NG 1	NOTES.	-	· ·			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/12/88 MPS-4342A 0245-3		DATA: ELINE [] NEW [X]
SUBSYSTEM: MDAC ID: ITEM: SOLENOID (LV72)	MPS 4342 LH2 FEED RTLS	S INBOARD DUMP VAL	VE OPENING
LEAD ANALYST:	A.J.MARINO		
ASSESSMENT:			
CRITICAL FLIGH HDW/FU	T	IDANCY SCREENS B C	CIL
NASA [2 /1R IOA [2 /1R	[P]	[F] [P]	[X] * [X]
COMPARE [/] []	[N] []	[]
RECOMMENDATIONS:	(If differe	ent from NASA)	
. [/] []	[] []	[] (ADD/DELETE)
* CIL RETENTION REMARKS:	RATIONALE: (If		UATE [] UATE []
	EA/CIL REVIEW	MEETING NOTES.	

ASSESSME ASSESSME NASA FME	NT I	D:	2/12/ MPS-4 0245-	1350		NASA DATA: BASELINE [] NEW [X]									
SUBSYSTE MDAC ID: ITEM: SOLENOID			MPS 4350 LH2 F	FEED	RTLS	OUTI	BOARD	DUMI	P VALV	Œ O1	PENI	ing ₍₁			
LEAD ANA	LYSI	?:	A.J.	IARIN	o										
ASSESSME	NT:														
	F	CICAL FLIGH OW/FU		R	···	DANC)	SCR		3 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	·	CII				
NASA IOA	[3 [3	3 /3]	[N	A] A]	[] []	IA] IA]	1] 1]	NA] NA]		[] . *]=			
COMPARE	[/]	[]	[]	[1		[]			
RECOMMEN	DATI	ons:	(If	dif	fere	nt fi	om N	ASA)							
-	[/]	[]	[]	[]	(Al	[DD/E] ELETE)			
* CIL RE	TENI	MOI	RATION	IALE:	(If	app]	licab	1	ADEQUA ADEQUA		[]			
REMARKS: RI/NASA								ሰ ጥፑር	<u>-</u>						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/12/88 MPS-4350A 0290-1		NASA DATA BASELINE NEW					
	MPS 4350 LH2 FEED R							
LEAD ANALYST:	A.J.MARINO							
ASSESSMENT:								
CRITICAL FLIGH HDW/FU	T	EDUNDANCY SCRE	ens C	CIL ITEM				
NASA [1 /1		A] [NA] A] [NA]	Γ NA l	r x 1 *				
IOA [3 /3] [NA	i [NA]	[NA]	[X] * []				
COMPARE [N /N] [] []	[]	[N]				
RECOMMENDATIONS:	(If diff	ferent from NA	SA)					
. [/) [] []	[] (A	[] DD/DELETE)				
* CIL RETENTION	RATIONALE:	(If applicable	e) ADEQUATE INADEQUATE					
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-	-87 AND RI/NAS	A CIL WORKSH	EET OF 12-14-				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			NASA DATA: BASELINE [] NEW [X]						
ITEM:	MPS 4350 LH2 FEED RTLS C	UTBOARD DU	MP VALVE OF	PENING					
SOLENOID (LV73) LEAD ANALYST:	A.J.MARINO			ी है , जिस्से अस्ति है ।					
ASSESSMENT:				. Landa iya i					
CRITICAL FLIGH HDW/FU	T	NCY SCREEN		CIL ITEM					
NASA [1 /1 IOA [3 /3] [NA]] [NA]	[NA] [NA] [NA]	[X] *					
COMPARE [N /N	1 1 , 1 ,	[] [j .	[N]					
RECOMMENDATIONS:	(If different	from NASA)						
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* CIL RETENTION DE REMARKS: REF: RI/NASA CI 87.		I	ADEQUATE NADEQUATE						

ASSESSME ASSESSME NASA FME	NT ID:	MPS-4	351			N	IASA DAT BASELIN NE]	
SUBSYSTE MDAC ID: ITEM: SOLENOID		MPS 4351 LH2 F	EED RT	LS OUT	BOARD	DUME	VALVE	OPEN]	ING	
LEAD ANA	LYST:	A.J.M	ARINO							
ASSESSME	NT:									
	CRITICA FLIGI HDW/FU			UNDANG	CY SCR	EENS		CII		
NASA IOA	[3 /3 [3 /3]	[NA] [NA]	[NA] NA]	[N	IA] IA]	[] *	
COMPARE	[/]	[]	[]	[1	[]	
RECOMMEN	DATIONS	: (If	diffe	rent i	from N	ASA)				
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* CIL RE REMARKS: RI/NASA			·			·	ADEQUATE ADEQUATE]	
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ASSESSME ASSESSME NASA FME	NT	I	D:	MI	/12/8 PS-43 245-2	35	2								ASA BASE	LIN		[]	
SUBSYSTE MDAC ID: ITEM: SOLENOID		ΓΛ.			352	EEI	D F	RTL	s	ישכ	rBo	ARI	ס מ		VAI	VE	OP	EN	IIN	īG	
LEAD ANA	LYS	ST	:	A.	J.M2	\R	INC)													
ASSESSME	NT:	:																			
		F	ICAL LIGH W/FUI	r	ľ		RI A	DU	NDA	ANC	CY B	SCI	REENS	s c				CI II		1	
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NASA IOA	Ĺ	2	/1R /1R	j		[P]]		[P]]	P	1			[X]	
COMPARE	[/]		[]		[N]	[]			[]	
RECOMMEN	DA'	ric	ons:		(If	d :	ifí	er	ent	. 1	fro	om l	NASA)							
-	[/]		[]		[]	[]	(AD	[D/	'DE] ELE	TE)
* CIL RE		NT:	ION 1	RAT	TION	X L.	E:	(I	fa	app	91 i	cal	-	ΑI	DEQU DEQU	IATE	:	[]	*
		25	A FM	EA.	/CTT	P.	EVI	EW	Μī	e En	rTi	IG 1	NOTE	S.							

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/12/88 MPS-4352A 0245-3			ASA DATA BASELINE NEW	: [] [x]
SUBSYSTEM: MDAC ID: ITEM: SOLENOID (LV73)	MPS 4352 LH2 FEED 1	RTLS OUTBO	DARD DUMP	VALVE O	PENING
LEAD ANALYST:	A.J.MARING	0			
ASSESSMENT:					
CRITICAL FLIGH	T	EDUNDANCY	SCREENS		CIL ITEM
HDW/FU	NC A	В	C		
NASA [2 /1R IOA [2 /1R] [F] [P] [P]	[X] *
COMPARE [/) [] [N] [1	[]
RECOMMENDATIONS:	(If dif	ferent fro	om NASA)		
. [/] [] [] [] (A	[] DD/DELETE)
* CIL RETENTION REMARKS:			A INA	DEQUATE DEQUATE	[]
REF: RI/NASA FM	EA/CIL REV	IEW MEETII	NG NOTES.		

ASSESSME ASSESSME NASA FME	TI	[D:	2/12/ MPS-4 0246-	360					NASA BASE		[ं क्षेत्र की गाउँचे मार्ग श]]]
SUBSYSTE MDAC ID:			MPS 4360 LH2 F	EED	MANI	FOLD	RTLS	PRE	ess va	LVE	(LV	74,LV75
LEAD ANA	LYST	r:	A.J.	IARI	МО							
ASSESSME	ENT:											
		rical Fligh	ITY T	,	REDUN			EENS			CII	_
	HI	OW/FU	NC	•	A	1	В		C	Fi .		
NASA IOA	[:	3 /3]	[NA] NA]	[]	NA] NA]	[NA] NA]		[]	X] *]
COMPARE	[/]	[]	[]	[]		[]
RECOMMEN	IDAT:	ions:	(II	di	ffere	nt f	rom N	ASA)	l			
-	ľ	/]	[]	[]]]	(A	-] DELETE)
* CIL RE		rion	RATION	IALE	: (If	app	licab		ADEQU IADEQU] .
RI/NASA		ICATE	S 1/1	FOR	ABOR	T. :	IOA C	ONC	JRS.			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/12/88 MPS-4361 NA	NASA DATA: BASELINE [] NEW [X]					
MDAC ID:	MPS 4361 LH2 FEED MANIFOLD RTLS	PRESS VALVE (LV74,L	V75)				
LEAD ANALYST:	A.J.MARINO						
ASSESSMENT:							
CRITICAL FLIGH		EENS CIL ITEM					
HDW/FU	INC A B	С					
NASA [/ IOA [3 /3] [] []] [NA] [NA]	[] [] [] []	*				
COMPARE [N /N] [N] [N]	[и] [ј					
RECOMMENDATIONS:	(If different from N	(ASA)					
1 /] [] []	[] [] (ADD/DELE	TE)				
	RATIONALE: (If applicab	ole) ADEQUATE [] INADEQUATE []					
REMARKS: THIS FAILURE IS	1/1 FOR RTLS ABORT AND	NA FOR NOMINAL.					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4362	MPS-4362 BASELINE []								
SUBSYSTEM: MDAC ID: ITEM:	MPS 4362 LH2 FEED MA	ANIFOLD RTLS	PRESS VALVE	(LV74,LV75)						
LEAD ANALYST:	LYST: A.J.MARINO									
ASSESSMENT:										
CRITICAI FLIGH		DUNDANCY SCRE	ENS	CIL ITEM						
HDW/FU		B	C							
NASA [3 /1F IOA [2 /1F	[P]	[F] [F]	[P] [P]	[X] * [X]						
COMPARE [N /	j []] []	[]	[]						
RECOMMENDATIONS:	(If diffe	erent from NA	SA)							
	j []] []	[] (AI	[DD/DELETE)						
* CIL RETENTION	RATIONALE:	(If applicable	ADEQUATE							
INADEQUATE [] REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.										

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [] NEW [X]				
	MPS 4370 LO2 OVERBOARD BLEED V	ALVE CLOSING SOLENOID				
LEAD ANALYST: A.J.MARINO						
ASSESSMENT:						
CRITICAL FLIGH	T	ITEM				
HDW/FU	NC A B	c				
NASA [1 /1 IOA [2 /1R] [NA] [NA] [P] [P]	[NA]				
COMPARE [N /N] [N] [N]	[N] []				
RECOMMENDATIONS:	(If different from	NASA)				
. [/] [] [1	[] [] (ADD/DELETE)			
* CIL RETENTION	RATIONALE: (If applica	ADEQUATE []				
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87 AND RI/N	INADEQUATE [] ASA CIL WORKSHEET OF 8-	18-			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:				MPS-4370A						NASA DATA: BASELINE [] NEW [X]				
SUBSYSTIMDAC ID: ITEM: (LV76)				MPS 4370 LO2		DARD E	3LE	ED V	ALVE		SING S	OLEN		
LEAD ANALYST: A.J.MARINO														
ASSESSMI	ENT	:												
FLIGH			ITY REDUNDANCY SCREEN T NC A B				REENS	NS CIL ITEN						
		ועמ	W/FU	NC	A			Ь		C				
NASA IOA	[[1 2	/1 /1R]	[NZ [P	A]	[NA] P]	[[NA] P]		Κ] Κ]] *	
COMPARE	Ĺ	N	/N]	[N	1	[и ј	[N]		[]	
RECOMME	NDA!	rI(ons:	(I	f dif	ferent	t f	rom	nasa)	,				
- 	[/]	[1	[1	[)		[DD/E] ELETE	E)
* CIL R	ETE	NT:	ION :	RATIO	NALE:	(If a	app	olica	ble)	2 . 223 .22	 			2
									IN		QUATE QUATE	[]	
REMARKS REF: R 87.		AS	A CI	L OF	12-23	-87 AI	4D	RI/N	ASA (CIL	WORKSH	EET	OF 12	2-14-

ASSESSMENT DATE: 2/ ASSESSMENT ID: MF NASA FMEA #: 02	PS-4370B	NASA DATA: BASELINE [] NEW [X]							
	PS 370 O2 OVERBOARD BLEED VALVE (CLOSING SOLENOID							
LEAD ANALYST: A.	A.J.MARINO								
ASSESSMENT:									
CRITICALITY FLIGHT HDW/FUNC		CIL ITEM C							
NASA [1 /1] IOA [2 /1R]	[NA] [NA] []	NA] [X]* P] [X]							
COMPARE [N /N]	[и] [и] [1	и] []							
RECOMMENDATIONS:	(If different from NASA)								
. [/]	[] [] [] [] (ADD/DELETE)							
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []									
REMARKS: REF: RI/NASA CIL C	OF 12-23-87 AND RI/NASA C	IL WORKSHEET OF 8-18-							

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [NEW []							
MDAC ID:	MPS 4371 LO2 OVERBOARD BLEED VALVE	CLOSING SOLE							
LEAD ANALYST:	A.J.MARINO								
ASSESSMENT:									
CRITICAL FLIGH HDW/FU		S CII							
NASA [2 /1R IOA [2 /1R] [P] [F] [P] [2	K] *						
COMPARE [/] [] [M] [] [] was						
RECOMMENDATIONS:	(If different from NASA)							
. [/	1 [1] [] DELETE)						
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []									

ASSESSME ASSESSME NASA FME	NT ID:	2/12/88 MPS-437 0244-2			NASA DATA: BASELINE [] NEW [X]				
SUBSYSTE MDAC ID: ITEM: (LV76)		MPS 4372 LO2 OVE	· · ·						
LEAD ANA									
ASSESSME	ENT:					•			
	CRITICAL FLIGH		REDUNDA	NCY SCREE	NS	CIL ITEM			
	HDW/FU		A	В	C				
NASA IOA	[3 /3 [3 /3] [NA] NA]	[NA] [NA]	[NA] [NA]	[X] * []			
COMPARE	[/] [1	[]	[]	[]			
RECOMMEN	DATIONS:	(If d	ifferent	from NAS	A)				
- ,	[/) [1	[]	[] (A	[DD/DELETE)			
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE []									
DEMADKG.					INADEQUATE	[]			
REMARKS: RI/NASA INDICATES 1/1 CRITICALITY FOR A PRELAUNCH ABORT. IOA CONCURS.									
REF: RI	/NASA CI	L OF 12-	23-87 AN	ID RI/NASA	CIL WORKSH	EET OF 8-18-			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4372A	NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEM: MDAC ID: ITEM: (LV76)	MPS 4372 LO2 OVERBOARD BLEED VALVE	CLOSING SOLENOID							
LEAD ANALYST:	A.J.MARINO								
ASSESSMENT:		· ···································							
CRITICAL: FLIGHT HDW/FUI	<u> </u>	CIL ITEM							
NASA [3 /3 IOA [3 /3] [NA] [NA] [] [NA] [NA] [NA] [X] * NA] []							
COMPARE [/] [] [] [1 [1 %							
RECOMMENDATIONS:	(If different from NASA)								
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REMARKS: RI/NASA INDICATES CONCURS.	RATIONALE: (If applicable) IN S 1/1 CRITICALITY FOR A PRE L OF 12-23-87 AND RI/NASA C	ADEQUATE [] NADEQUATE [] ELAUNCH ABORT. IOA							

	ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:	: 2/12/88 MPS-438 0243-1		NASA DATA BASELINE NEW						
	SUBSYSTEM: MDAC ID: ITEM: (LV77,LV78)	MPS 4380 LO2 POG	O ACCUM	RECIRC V	ALVE CLOSING	S SOLENOID				
LEAD ANALYST: A.J.MARINO										
	ASSESSMENT:									
	CRITICA FLIG HDW/F									
	NASA [3 /3 IOA [3 /3] [NA] NA]	[NA] [NA]	[NA] [NA]	* [X]				
	COMPARE [/] []	[]	[]	[]				
	RECOMMENDATIONS	: (If d	ifferen	t from NA	ASA)					
	. [/] []	[]	[] (2	[ADD/DELETE)				
	* CIL RETENTION	RATIONAL	E: (If	applicabl	le) ADEQUATE INADEQUATE	• •				
	REMARKS: RI/NASA REPORTS CONCURS.	A 1/1 CR	RITICALI	TY FOR PI	RELAUNCH ABOI	RTS. IOA				

ASSESSME ASSESSME NASA FME	ENT I	D:	MPS-	4381	L		NASA DATA: BASELINE [] NEW [X]						
SUBSYSTE MDAC ID: ITEM: (LV77,LV	1		MPS 4381 LO2									ENO]	ID
LEAD ANA	LYST	: A.J.MARINO											
ASSESSME	ASSESSMENT:												
			ΙΤΥ		REDUN	DANC'	Y SCI	REENS			CII		
FLIGHT HDW/FUN			=			1	в с			ITEM			
NASA IOA	[3 [3	/3 /3]]	NA] NA]	[] []	NA] NA]	[N	IA] IA]		[X] '	ŧ
COMPARE	[/]	[]	[]	[]		[]	
RECOMMEN	DATI(ons:	(I	f di	iffere	nt f	rom 1	NASA)					
-	[/]	[]	[]	[]	(A)	[DD/D) ELET	TE)
* CIL RE	TENT:	ION 1	RATIO	NALE	E: (If	app:	licak						
									DEQUA		[]	
RI/NASA CONCURS.	REMARKS: RI/NASA REPORTS A 1/1 CRITICALITY FOR PRELAUNCH ABORTS. IOA CONCURS.												
REF: R)	(/NAS	A CI	L OF	12-2	23-87	AND]	RI/NA	ASA CI	L WOI	KKSHI	EET	OF 8	8-18-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4382	NASA DATA: BASELINE [] NEW [X]								
MDAC ID:	MPS 4382 LO2 POGO	O ACCUM	RECIRC VA	ALVE CLOSING	SOLENOID					
LEAD ANALYST:	A.J.MAR	INO								
ASSESSMENT:										
CRITICALI FLIGHT HDW/FUN	ľ									
·				_						
NASA [3 /3 IOA [2 /1R] [NA] P]	[NA] [F]	[NA] [P]	[x] *					
COMPARE [N /N] [n]	[14]	[N]	[и]					
RECOMMENDATIONS:	(If d	ifferen	t from NAS	SA)						
. [/] []	[]	[]	[DD/DELETE)					
* CIL RETENTION F	RATIONAL	E: (If a	applicable	e) ADEQUATE INADEQUATE						
LAUNCH SCRUB. REF: RI/NASA FMI	FA/CTT. PI	EVIEW M	EETTNG NOT	res .						
WEL: WILLIAMON LIN	my cin K	TH A T TO AA 1271	777710 HO	•						

ASSESSME	ASSESSMENT DATE: 2/12/88 ASSESSMENT ID: MPS-4382A NASA FMEA #: 0243-4							NASA DATA: BASELINE [] NEW [X]				
SUBSYSTE MDAC ID: ITEM: (LV77,LV			MPS 4382 LO2 P	ogo	IRC	VALVE	closi	NG	SOL	ENOID		
LEAD ANALYST: A.J.MARINO												
ASSESSMENT:												
	ICAL LIGH								CIL ITEM			
	HD	W/FU	NC	,	À	B	}	С	± 1.5			
NASA IOA		/1R /1R		[P] P]	[F [F	<u>]</u>	[P]		[X [X] *
COMPARE	[/]	ſ]	ι,	1	[]		[1
RECOMMEN	DATI	ons:	(If	di	ffere	nt fr	om N	ASA)				
-	[/]	[1	[]	[]	(A)	[DD/D] ELETE)
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []												
	REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 8-18-											

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/12/88 MPS-4390 0250-1		NASA DATA: BASELINE [] NEW [X]				
SUBSYSTEM: MDAC ID: ITEM:	MPS 4390 LH2 HI POINT	BLEED VALVE OPENING	G SOLENOID (LV79)				
LEAD ANALYST:	A.J.MARINO						
ASSESSMENT:							
CRITICAL FLIGH	T						
HDW/FU		В С					
NASA [3 /3 IOA [3 /3] [NA]] [NA]	[NA] [NA] [NA] [NA]	[] *				
COMPARE [/] []	[] []	[]				
RECOMMENDATIONS:	(If differe	ent from NASA)					
[/] []	[] []	[] (ADD/DELETE)				
* CIL RETENTION REMARKS:		ADEQUA INADEQUA					
REF: RI/NASA FM	EA/CIL REVIEW	MEETING NOTES.					

ASSESSMEN ASSESSMEN NASA FMEA	T ID:	2/12/88 MPS-439 0250-5		NASA DATA: BASELINE [NEW [X							
SUBSYSTEM MDAC ID: ITEM:		MPS 4391 LH2 HI	POINT E	LEED VALV	LENOID	(LV79)					
LEAD ANAI	LYST:	A.J.MA	RINO								
ASSESSMEN	T:					125					
c	RITICAL FLIGH		REDUND	ANCY SCRE	ENS	CIL ITEM					
	HDW/FU		A	В	C - managed	LIBR					
NASA IOA	[3 /3 [3 /3]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[]	*				
COMPARE	[/	3	[]	[]	[]	[]					
RECOMMEND	DATIONS:	(If o	differen	t from NA	SA)						
_	[/	1	[]	[]	[]	[]	ETE)				
* CIL RET	TENTION	RATIONA	LE: (If	applicabl	e) ADEQUATE INADEQUATE						
REMARKS: REF: RI/	/NASA FM	EA/CIL	REVIEW M	EETING NO	TES.						

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [] NEW [X]						
MDAC ID:	MPS 4392 LH2 HI POINT BLEED	VALVE OPENING SO	LENOID (LV79)					
LEAD ANALYST:	A.J.MARINO							
ASSESSMENT:								
CRITICAL FLIGH		SCREENS	CIL ITEM					
HDW/FU		3 C						
NASA [1 /1 IOA [2 /1R] [NA] [N] [P] [F	[NA] [P]	[X] * [X]					
COMPARE [N /N] [N] [N	[וא]	[]					
RECOMMENDATIONS:	(If different fr	com NASA)						
[2 /1R] [P] [F		[] DD/DELETE)					
* CIL RETENTION	RATIONALE: (If appl							
		ADEQUATE INADEQUATE	[]					
REMARKS: REF: RI/NASA CI	L OF 12-23-87 AND F	RI/NASA CIL WORKSH	EET OF 10-14-					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/12/88 MPS-4392A 0250-4		NASA DATA: BASELINE [] NEW [X]					
	MPS 4392 LH2 HI POI	NT BLEED VAI	NE OPENING SO	LENOID (LV79)				
LEAD ANALYST:	A.J.MARINO							
ASSESSMENT:								
CRITICAL FLIGH		DUNDANCY SCR	CIL ITEM					
HDW/FU		В	C	1141				
NASA [2 /1R IOA [2 /1R] [P] [P] [F]	[P] [P]	[X] *				
COMPARE [/] [] []	[]	[]				
RECOMMENDATIONS:	(If diff	erent from N	(ASA)					
[/] [] []	[] (Ai	[] DD/DELETE)				
* CIL RETENTION	RATIONALE:	(If applicab	ole) ADEQUATE INADEQUATE	[] []				
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-	87 AND RI/NA	SA CIL WORKSHI					

remains the control of the second of the second of

ASSESSME	NT DATE: 2/12/88 NT ID: MPS-4400 A #: 0226-1					NASA DATA: BASELINE [] NEW [X]						
SUBSYSTE MDAC ID: ITEM: (LV80,LV				REV?	LVE	REDUN	DANT	clos	ING SOL	ENOID)	
LEAD ANA	LYST	:	A.J.M	A.J.MARINO								
ASSESSMENT:												
CRITICALI FLIGHT				TY REDUNDANCY SCREENS						CIL ITEM		
HDW/FU				7	7	В	,	C		116	ırı	
NASA IOA	[2 [2	/1R /1R]	[I	?]	[F [F]	[P]	X] X]	[]	*
COMPARE	[/]	[]	[1	[]	[]	
RECOMMEN	DATI	ons:	(If	dii	fer	ent fr	om N	ASA)				
-	[/]	[]	[]	[] ([ADD/D		TE)
	* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []											
REMARKS: REF: RI 87.		A CI	L OF 1	2-23	8-87	AND R	I/NA	SA CI	L WORKS	неет	OF	12-14-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	•	NASA DATA: BASELINE [] NEW [X]						
	MPS 4400 LO2 PREVALVE	REDUNDANT C	LOSING SOLEM	NOID				
LEAD ANALYST:	A.J.MARINO							
ASSESSMENT:								
CRITICAL FLIGH HDW/FU	ľ	NDANCY SCREE B	ns C	CIL ITEM				
NASA [1 /1 IOA [2 /1R] [NA]] [P]	[NA] [F]	[NA] [P]	[X] *				
COMPARE [N /N] [N]	[и]	[и]	[]				
RECOMMENDATIONS:	(If differ	ent from NAS	A)					
. [/] []	[]	[] (AI	[] DD/DELETE)				
* CIL RETENTION : REMARKS: REF: RI/NASA CI			ADEQUATE INADEQUATE	į j				
87.	L OF 12-23-67	MID KI/NASA	CIL WORKSHI	361 OF 12-14-				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/12/88 MPS-4400B 0290-2	NASA DATA: BASELINE [] NEW [X]						
SUBSYSTEM: MDAC ID: ITEM: (LV80,LV81,LV82)	MPS 4400 LO2 PREVALVE	REDUNDANT	CLOSING SOLE	NOID				
LEAD ANALYST:	A.J.MARINO							
ASSESSMENT:								
CRITICAL FLIGH HDW/FU	T	ndancy scre B	ENS C	CIL ITEM				
NASA [1 /1 IOA [2 /1R] [NA]	[NA] [F]	[NA] [P]	[X] * [X]				
COMPARE [N /N] [N]	[N]	[N]	[]				
RECOMMENDATIONS:	(If differ	ent from NA	SA)					
. [/] []	[]	[] (A	[DD/DELETE)				
* CIL RETENTION	RATIONALE: (I	f applicabl						
			ADEQUATE INADEQUATE					
REMARKS: REF: RI/NASA CI 87.	L OF 12-23-87	AND RI/NAS	A CIL WORKSH	EET OF 12-14-				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			[x]	
MDAC ID:	MPS 4401 LO2 PREVALVE	REDUNDANT CI	LOSING SOLE	NOID
LEAD ANALYST:	A.J.MARINO			
ASSESSMENT:				र अने हिंद स्टिक्ट होने होने होते हैं।
FLICH	ITY REDU I NC A			
NASA [2 /1R IOA [2 /1R] [P]] [P]	[F] [P] P]	[X] * [X]
COMPARE [/] []	[]]	[]
RECOMMENDATIONS:	(If differ	ent from NASA	7)	
[/] []	[]	[] (Al	[] OD/DELETE)
* CIL RETENTION REMARKS: REF: RI/NASA CI	·	1	ADEQUATE NADEQUATE	

ASSESSMENT DATE: 2/12/88 ASSESSMENT ID: MPS-4402 NASA FMEA #: 0226-2											ASA DATA BASELINE NEW]		
SUBSYSTE MDAC ID: ITEM: (LV80,LV			MPS 4402 LO2 PI	4402 LO2 PREVALVE R				JNE	ANT	CL	osi	ING SOLE	NOID		·
LEAD ANALYST: A.J.MARIN					ENC)									
ASSESSME	NT:														
CRITICALITY FLIGHT					RE	EDUND	ANG	CY	SCRE	EENS	5		CIL		
		W/FU			A	4		В			С		110		
NASA IOA	[3 [3	/1R /3]	[P NA] A]	[P NA]	[P NA] A]]]	*
COMPARE	[/N]	[N]	[N]	[N]	[]	
RECOMMEN	DATI	ons:	(If	d:	ifí	feren	t:	fro	om NA	ASA))				
•	[/]	[]	[]	[] (A	[.DD/D	ELI	ETE)
* CIL RE	TENT	ION 1	RATION	ΑLJ	E:	(If	ap)	pli	[cab]	-		DEQUATE DEQUATE	[]	
NSTS 222 RIV IN T REF: RI	HE F	AILU.	RE SER	Œ	5.	CRI	TI	CAI	LITY	3/					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [] NEW [X]					
SUBSYSTEM: MDAC ID: ITEM: (LV80,LV81,LV82)	MPS 4402 LO2 PREVALVE	REDUNDANT CLOSIN	IG SOLENOID				
LEAD ANALYST:	A.J.MARINO						
ASSESSMENT:							
CRITICAL FLIGH HDW/FU	T	NDANCY SCREENS B C	CIL				
NASA [2 /1R IOA [3 /3		[F] [P] [NA] [NA]	[X] * []				
COMPARE [N /N	ן אן	[и] [и]	[N] *.=: · · ·				
RECOMMENDATIONS:	(If differe	ent from NASA)					
	j []	[] []	[] (ADD/DELETE)				
* CIL RETENTION REMARKS:	RATIONALE: (I:		EQUATE [] EQUATE []				
	L OF 12-23-87	AND RI/NASA CIL	WORKSHEET OF 12-14-				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEM: MDAC ID: ITEM: (LV83,LV84,LV85)	MPS 4410 LO2 PREVALV	VE REDUNDANT O	PENING SOLE	40ID						
LEAD ANALYST:	A.J.MARINO									
ASSESSMENT:										
CRITICAL FLIGH HDW/FU	T	DUNDANCY SCREE	ns C	CIL ITEM						
·			_							
NASA [3 /1R IOA [3 /3] [P]] [P]] [NA]	[NA]	[]						
COMPARE [/N] [N]] [N]	[и]	[]						
RECOMMENDATIONS:	(If diffe	erent from NAS	A)							
. [/] []] []	[] (Al	[] DD/DELETE)						
* CIL RETENTION	RATIONALE:) ADEQUATE INADEQUATE	•						
REMARKS: NSTS 22206 2.3.2 RIV IN FAILURE S REF: RI/NASA CI	ERIES. CRI	THE INCLUSION	OF HPOT SE	ALS OR SSME						

ASSESSME ASSESSME NASA FME	NT I			-4411		NASA DATA: BASELINE [] NEW [X]							
SUBSYSTE MDAC ID: ITEM: (LV83,LV				MPS 4411 LO2 PREVALVE REDUNDA					NING S	OLEN	OID		
LEAD ANA	LYST	:	A.J.	A.J.MARINO									
ASSESSME	NT:										26	•	
CRITICALITY FLIGHT HDW/FUNC					REDUNDANCY SCREENS A B C					CIL ITEM			
NASA IOA	[2 [3	/1R /3]	[P] A]]	F] NA]	[]	P] NA]		[X]] *]	
COMPARE	[N	/N]	[N]	. [и]	[]	и ј		[N]	
RECOMMEN	DATI	ons:	(1	f dif	fere	ent f	rom N	(ASA)					
•	[/]	[]	[]	[1	(AD	[D/DE] LETE)	
* CIL RE	_	ION :	RATIO	ONALE:	(If	app	licab	1	ADEQU <i>I</i> ADEQU <i>I</i>	MTE	[]	
REF: RI	/NAS	A CI	L OF	12-23	-87	AND	RI/NA	SA C	IL WOF	RKSHE	ET O	F 12-14-	-

ASSESSME ASSESSME NASA FME					ASA DATA BASELINE NEW]				
SUBSYSTE MDAC ID: ITEM: (LV83,LV		LO2 PR	EVA:	LVE 1	REDUNI	DANT	OPEN	ING SOLE	NOID		
LEAD ANALYST: A.J.MARINO											
ASSESSME	NT:										
	CRITICA FLIG	R	EDUN	DANCY	SCRI	EENS		CIL			
		UNC	A		В		С				
NASA IOA	[2 /1 [2 /1	R] R]	[P]	[F]	[P]	x] x]]	*
COMPARE	[/]	[]	[]	[]	[]	
RECOMMEN	DATIONS	: (If	dif	fere	nt fr	om Ni	ASA)				
-	[/]	[]	[]	[[DD/D		
	* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []										
REMARKS: REF: RI 87.	/NASA C	IL OF 12	-23	-87 i	AND R	I/NA:	SA CI	L WORKSH	EET	OF	12-14-

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/15/88 MPS-4412A 0225-5	BASE	LINE [] NEW [X]
SUBSYSTEM: MDAC ID: ITEM: (LV83,LV84,LV85)	4412 LO2 PREVALVE RE	DUNDANT OPENING	SOLENOID
LEAD ANALYST:	A.J.MARINO		
ASSESSMENT:			
CRITICAL FLIGH	ITY REDUNDA T	NCY SCREENS	CIL ITEM
	NC A	ВС	
NASA [3 /1R IOA [2 /1R] [P]] [P]	[F] [P] [F] [P]	[X] *
COMPARE [N /	1 C J	[] []	[]
RECOMMENDATIONS:	(If different	from NASA)	
[2 /1R] [P]	[F] [P]	[] (ADD/DELETE)
* CIL RETENTION		ADEQU	ATE [] ATE []
MECO, REGARDLESS	OPENING SOLENOID OF THE OPERATION	N OF THE CLOSING	EVALVE CLOSURE AT SOLENOIDS. RKSHEET OF 12-14-

	2/15/88 MPS-4420 NA		NASA DATA: BASELINE [] NEW [X]								
	MPS 4420 LO2 TANK	GND PRE-PRE	SS (ORB/GND) D	ISC. (ORB							
LEAD ANALYST:	A.J.MARIN	10									
ASSESSMENT:											
CRITICAL		REDUNDANCY S	CREENS	CIL ITEM							
FLIGH HDW/F		В	C	1127							
NASA [/ IOA [2 /1]] [] [] P] [P]	[p]	[] * [X]							
COMPARE [N /N] []	и] [и]	[N]	[N]							
RECOMMENDATIONS	: (If dif	fferent from	n NASA)								
- [/] [] []	[]	[ADD/DELETE)							
* CIL RETENTION	RATIONALE:	: (If applic	able) ADEQUATE	[]							
D91/1 D1/2			INADEQUATE								
REMARKS: THE DISCONNECT V RI/NASA 0517.				61-1064 AND							

ASSESSMI	SSESSMENT DATE: 2/15/88 SSESSMENT ID: MPS-4421 ASA FMEA #: NA							NASA DATA: BASELINE [] NEW [X]									
SUBSYSTI MDAC ID: ITEM: HALF) (1		.		MPS 4421 LO2 T	ANI	C G	ND F	PRE	-P	RESS	S (O	RB/	'GND)	DIS	c.	(OF	₹B
LEAD ANALYST: A.J.MARI)										
ASSESSMI	ENT	:		•										÷.			·. · =
		FI	CAL LIGH V/FU	r		RE A	DUNE	AN	CY B		REEN	s C			CIL		
NASA IOA	[3	/ /3]	[NA]	[N] A]	[[N.]]]	*
COMPARE	[N	/N]	[N]	[N]	ι	N]		[]	¥
RECOMME	NDA'	ric	ons:	(If	di	lff	eren	it	fr	om 1	NASA)					
-	[/	1	[]	[]	C		1	(AD	[D/D	-	TE)
* CIL RI	• •		· · . · 	.,					_		I	IA IAN	DEQUAT	E E]	
THE DISC RI/NASA				AS PRE HIS IO											-10	64	AND

ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:	: 2/15/88 MPS-4422 NA		NASA DATA: BASELINE [] NEW [X]						
SUBSYSTEM: MDAC ID: ITEM: HALF) (PD9)	MPS 4422 LO2 TANK	GND PRE-PRESS	(ORB/GND) DI	SC. (ORB					
LEAD ANALYST:	A.J.MARIN	10							
ASSESSMENT:									
CRITICA FLIG		REDUNDANCY SCRI	eens	CIL ITEM					
HDW/F	UNC A	В	С						
NASA [/ IOA [2 /1	R] [P) [p]	[] [P]	[x] *					
COMPARE [N /N] [N	[и] [и	[N]	[и]					
RECOMMENDATIONS	: (If dif	ferent from NA	ASA)						
. [/] [] []	[] (A)	[] ADD/DELETE)					
* CIL RETENTION	RATIONALE:	(If applicabl	le) ADEQUATE INADEQUATE						
REMARKS: THE DISCONNECT WAS PREVIOUSLY ANALYZED UNDER IOA 1061-1064 AND RI/NASA 0517. THIS IOA ANALYSIS SHOULD BE DELETED.									

	NT	II):	TE: 2/15/88 : MPS-4430 NA						NASA DATA: BASELINE [] NEW [X]							
SUBSYSTE MDAC ID: ITEM: HALF) (P				MPS 4430 LH2 T	ANK	G	ND PI	RE:	-PI	RESS			/GND) I	oisc.	(ORB	
LEAD ANA	LYS	T:	:	A.J.M	\RI	NO	I										
ASSESSME	NT:	:															
		FI	LIGH	ety P C		RE A	DUNDA	\N(CY B	SCRE	ENS	S C		CI II	L EM	I	
NASA IOA	[2	/ /1R]	[P]]	P]	[P]	[[X] *]	
COMPARE	[N	/N]	[N]	[N]	[N]	[N]	
RECOMMEN	DAI	'IC	ons:	(If	di	ff	erent	: :	fro	om NA	SA)					
	[/]	[1	[]	[]] (ADD/	DE		Ξ)
* CIL RE		T	ON I	RATION	ALE	•	(If a	p	pli	cabl	-	ΑI	DEQUATI DEQUATI] 3]	
REMARKS: THE DISC	ONN														ND	222	22,

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4431	NASA DATA: BASELINE [] NEW [X]						
SUBSYSTEM: MDAC ID: ITEM: HALF) (PD10)	MPS 4431 LH2 TANK GND PRE-PRESS (O	RB/GND) DISC. (ORB						
LEAD ANALYST:	A.J.MARINO							
ASSESSMENT:								
CRITICAL FLIGH	IT	ITEM						
HDW/FU	INC A B	С						
NASA [/ IOA [3 /3] [] [] [] [] [] [] [] [] [] [NA] [] *						
COMPARE [N /N] [N] [N] [N] []						
RECOMMENDATIONS:	(If different from NASA))						
- [/] [] [] [] [] (ADD/DELETE)						
* CIL RETENTION	RATIONALE: (If applicable)	ADEQUATE [] NADEQUATE []						
REMARKS: THE DISCONNECT WAND RI/NASA 0501	WAS PREVIOUSLY ANALYZED UND L. THIS IOA ANALYSIS SHOUL	ER IOA 2221 AND 2222, D BE DELETED.						

ASSESSMENT ASSESSMENT NASA FMEA	ID:	MPS-4432	NASA DATA: BASELINE NEW	[] [X]		
SUBSYSTEM: MDAC ID: ITEM: HALF) (PD1		MPS 4432 LH2 TANK	GND PRE	-PRESS (ORB/GND) DIS	SC. (ORB
LEAD ANALY	ST:	A.J.MARIN	0			
ASSESSMENT	':					
	FLIGHT	TY R		CY SCREE	c C	CIL ITEM
NASA [] AOI	/ 2 /1R] [p] [p]	[P]	[x] *
COMPARE [N /N] [N] [и ј	[N]	[N]
RECOMMENDA	TIONS:	(If dif	ferent :	from NAS	iA)	
- [/] [] []	[] (AI	[] DD/DELETE)
	NTION I	RATIONALE:	(If ap	plicable	ADEQUATE	[]
					DER IOA 2221 LD BE DELETE	

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:		NASA DATA: BASELINE [] NEW [X]								
	MPS 4460 TEST PORT, P	NEU HE OUTLET	(TP1)							
LEAD ANALYST:	A.J.MARINO									
ASSESSMENT:										
CRITICAL FLIGH		NDANCY SCREEN	ıs	CIL ITEM						
HDW/FU		В	С	11011						
NASA [/ IOA [1 /1] []] [NA]	[] [AN]	NA]	[x] *.						
COMPARE [N /N	ן א]	[и]	N]	[N]						
RECOMMENDATIONS:	(If differ	ent from NASA	7)							
[/] []	[] [[] (A)	[DD/DELETE)						
* CIL RETENTION	RATIONALE: (I		ADEQUATE							
REMARKS: THIS FAILURE IS COVERED UNDER LEAKAGE OF THE LINE ON IOA ANALYSIS 4630 AND RI/NASA 0236. THIS IOA ANALYSIS SHOULD BE DELETED.										

ASSESSM ASSESSM NASA FM	D:							ASA DAT BASELIN NE]			
SUBSYST MDAC ID ITEM:				MPS 447 TES	0	, LI	I2 RE	PRESS	REG (OUTLET	(TP3)		
LEAD AN	ALY	ST	:	A.J	.MARIN	0							
ASSESSM	ENT	:											
		F	LIGH					Y SCR			CII		
	1	HD	W/FU	NC	A			В	С				
NASA IOA	[3	/3]	[[N] A]	[]] NA]	[[N.] A]	. [] *	
COMPARE	[N	/N	3	[N]	[]	ן א	[N]	[]	
RECOMME	NDA'	TI	ons:	(If dif	fere	ent f	rom N	ASA)				
-	(/]	[]	. [1	[[ADD/I] ELETE	Ξ)
* CIL R	ETE:	NT:	ION	RATI	ONALE:	(If	app	licab		DEQUATE	r	٦.	
										DEQUATE	-]	
REMARKS THIS FA	•	RE	TS	COVE	RED UN	DER	LEAK	AGE O	F THE	LINE O	N IOA		
WORKSHE	200 Page 11 11 11		C. Time have been Target Target							DELETE		=	

ASSESSME ASSESSME NASA FME	NT ID:	2/15/88 MPS-448 NA		NASA DATA: BASELINE [] NEW [X]						
SUBSYSTE MDAC ID:		MPS 4480 TEST PO	RT, LO2	REPRESS	REG OUTLET (TP4)				
LEAD ANA	LYST:	A.J.MAR	INO							
ASSESSME	NT:									
	CRITICAL FLIGH		REDUND	ANCY SCRE	ENS	CIL ITEM				
	HDW/FU	NC	A	В	С					
NASA IOA	[/ / 3] [NA]	[NA]	[] [NA]	[] *				
COMPARE	[N /N] [n j	[N]	[N]	[]				
RECOMMEN	DATIONS:	(If d	ifferen	t from NA	SA)					
÷ ·	[/] []	[]	[] (A)	[] .DD/DELETE)				
* CIL RE	TENTION	RATIONAL	E: (If	applicabl						
DEWI DEG					ADEQUATE INADEQUATE					
REMARKS: THIS FAI WORKSHEE	LURE IS				THE LINE ON D BE DELETED					

ASSESSMENT ASSESSMENT NASA FMEA	r ID):	MPS-4490						NASA DATA BASELINE NEW	-		
SUBSYSTEM MDAC ID: ITEM:	:		4490	ORT,	, LO2	PRE	PRESS		SC. CHECK			Э
LEAD ANAL	YST:	*****	A.J.MA	RINC)							
ASSESSMEN'	r:											
CI	CRITICALITY FLIGHT					MCA	SCRE	ens		CIL		
FLIGHT HDW/FUI				A	A , B				C , ;	TIE	-1	
NASA IOA	[[2	/ /1R]	[[P]	[[F)]	p]	[[x] *	
COMPARE	[И	/N]	[N	1	[N	[]	[N]	[14]	
RECOMMENDA			(If	difi	ferent	fr	om NAS	SA)				
-	[/	1	[]	[]	[] (A	[.DD/D1] ELETE)	
* CIL RET	ENTI	ON F	RATIONA	LE:	(If a	appl	icable.	•	ADEQUATE ADEQUATE]	
REMARKS: THIS FAIL WORKSHEET SHOULD BE	264	ANI	RI/NA									

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4500	NASA DATA: BASELINE [] NEW [X]											
SUBSYSTEM: MDAC ID: ITEM:	MPS 4500 TEST PORT, LH2 PREPRES	SS DISC. CHECK VALVE (T)	P10)										
LEAD ANALYST:	A.J.MARINO												
ASSESSMENT:													
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM													
HDW/FU		C											
NASA [/ IOA [2 /1R] [] [] [P]	[] [X] *											
COMPARE [N /N] [N] [N]	[N] [N]											
RECOMMENDATIONS:	(If different from N	IASA)											
[/] [] []	[] [] (ADD/DELETE))										
* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []													
REMARKS: THIS FAILURE IS WORKSHEET 346 AN DELETED.	COVERED UNDER LEAKAGE OF THIS I	OF THE LINE ON IOA IOA ANALYSIS SHOULD BE											

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4510	NASA DATA: BASELINE [] NEW [X]											
	MPS 4510 TEST PORT, PNEU SUPPLY HE	LIUM (TP29)											
LEAD ANALYST:	A.J.MARINO												
ASSESSMENT:													
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM													
	FLIGHT HDW/FUNC A B C												
NASA [/ IOA [2 /2] [] [] [] [] [] [] [] [] [] [NA] [] *											
COMPARE [N /N] [N] [N] [и] [и]											
RECOMMENDATIONS:	(If different from NASA	۸)											
] [] [] [] [] (ADD/DELETE)											
* CIL RETENTION I	RATIONALE: (If applicable) I	ADEQUATE []											
	COVERED UNDER LEAKAGE OF I	HE LINE ON IOA ANALYSIS											
4620. THIS IOA	ANALYSIS SHOULD BE DELETED) .											

ASSESSMEN ASSESSMEN NASA FMEA	T ID:	MPS-452			BASELINE NEW		-
SUBSYSTEM MDAC ID: ITEM:	-	MPS 4520 TEST PO	ORT, CHEC	K VALVE	CV24 LEAKAGE	(TP:	36)
LEAD ANAL	YST:	A.J.MAR	RINO				
ASSESSMEN	T:						
C	RITICAL: FLIGHT HDW/FUI	r	REDUNDA A	NCY SCRI	eens C	CIL	
NASA IOA	[/ [3 /3] [[] [NA]	[] [NA]	[] [NA]	[] *
COMPARE	[N /N] [[и]	[N]	[и]	[]
RECOMMEND	ATIONS:	(If d	different	from N	ASA)		
-	[/] [[]	[]	[] (A	[.DD/D] ELETE)
* CIL RET	ENTION	RATIONAI	LE: (If a	applicab	le) ADEQUATE INADEQUATE	[]
REMARKS: THIS FAII 4640 AND	URE IS RI/NASA	COVERED 0634.	UNDER LI	EAKAGE O	F THE LINE ON IS SHOULD BE	IOA DELE	ANALYSIS TED.

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	NASA DATA: BASELINE [] NEW [X]		
SUBSYSTEM: MDAC ID: ITEM:	MPS 4530 PNEU VALVE	HE SUPPLY REGULA	ATOR (PR4)
LEAD ANALYST:	A.J.MARINO		
ASSESSMENT:			(17 Thus 1881)
CRITICAL FLIGH		OUNDANCY SCREENS	CIL ITEM
HDW/FU			
NASA [3 /1R IOA [2 /1R] [P]	[F] []	P] [X]*
COMPARE [N /] []	[и] [] []
RECOMMENDATIONS:	(If diffe	erent from NASA)	
[2 /1R] [P]	[P] [1	P] [] (ADD/DELETE)
* CIL RETENTION	RATIONALE: (
		INZ	ADEQUATE [] ADEQUATE []
RELIEF SYSTEMS W HYDROGEN WILL CR	ILL PROTECT : EATE A FIRE !	AGAINST MANIFOLI HAZARD DURING EN	ERATIONS FOR DUMP. D RUPTURE. VENTING NTRY/LANDING. MEA/CIL REVIEW MEETING

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4530A	NASA DATA BASELINE NEW	
	MPS 4530 PNEU VALVE HE SUI	PPLY REGULATOR (PR4))
LEAD ANALYST:	A.J.MARINO		
ASSESSMENT:			
CRITICAL FLIGH		CY SCREENS	CIL ITEM
	NC A	ВС	
NASA [1 /1 IOA [2 /1R] [NA] [] [P] [NA] [NA] P] [P]	[X] * [X]
COMPARE [N /N] [и] [N] [N]	[]
RECOMMENDATIONS:	(If different	from NASA)	
] [] [] [] (A	[DD/DELETE)
* CIL RETENTION	RATIONALE: (If ap	plicable) ADEQUATE INADEQUATE	
REMARKS: REF: RI/NASA CI NOTES.	L OF 12-23-87 AND	RI/NASA FMEA/CIL R	EVIEW MEETING

ASSESSMI ASSESSMI NASA FMI	ENT	ID):	MPS	-453					DATA ELINE NEW		•	
SUBSYSTE MDAC ID:				MPS 453 PNE	1	LVE	HE SU	PPLY	REGU	LATOR	(PR4)		
LEAD ANA	LYS	T:		A.J	.MAR	INO							
ASSESSME	ENT:											1 1111	Sign of the state
			CAL.			REI	DUNDAN	CY S	CREEN	S		CIL	
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COMPARE	(N	/N]	[•] []	[]		[N]
RECOMMEN	IDAT	ΊΟ	NS:	(If d	iffe	erent	from	NASA)			
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* CIL RE		TI	ON I	RATI	ONAL	E: ((If ap	plica		ADEQ!	UATE UATE	[]
REMARKS: RELIEF V REF: RI NOTES.	ALV								r com	PARTM	ENT.	÷	

ASSESSME ASSESSME NASA FME	NT	II):	1	MPS	-45	40)									ASEL	ATA: LINE NEW	•]		
SUBSYSTE MDAC ID: ITEM:					MPS 454 LO2	10	NI	F	REI	PRES	SS	F	ŒG	ULA	TC	R	(PR5	5)					
LEAD ANA	LYS	ST:	;		A. .	J.MA	RI	NO	•							2					÷	-	-
ASSESSME	NT	•																					
	CR:							RE	DUI	(DA	NC	Y	sc	CREE	NS	3			-	L			
-	1		LIG //F					A				В				С				. mr			
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* CIL RI	ETE	NT:	ION	ı R	TA	ION	ΑLI	E:	(I:	f a	ΡI	pl:	ica	able	:)	_		. ~=			,		
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REMARKS: REPRESSURELIEF S REF: R: NOTES.	JRI SVS	TE	MS	W]	LL	PRO	TC	EC?	ΓĀ	GAI	NS	ST	M	ANIE	·O	LD	RUP	TURE.	•				

ASSESSME ASSESSME NASA FME	NT :	ID:	MPS-4	54 0	A		NASA DATA: BASELINE [] NEW [X]									
SUBSYSTE MDAC ID: ITEM:			MPS 4540 LO2 M	ANI	F	REPRES	ss	REGU	JLAT	OR	(PR5)					
LEAD ANA	LYSI	r:	A.J.M	ARI	NO											
ASSESSME	NT:															
•		rical Fligh			RE	DUNDA	1C	SCF	REENS	3		C:	IL Cen	a.		
			NC	A B C										•		
NASA IOA	[]	l /1 2 /1R]	[NA P] [NA] F]	[[NA P	A]]	[X X]	*	
COMPARE	[]	1 /N]	[N] [4]	[N]	[]		
RECOMMEN	DATI	ons:	(If	di	ff	erent	fı	om N	(ASA)						
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* CIL RE	rent	I NOI	RATION	ALE	:	(If ap	[q	icab	•	AI IAI	DEQUATE DEQUATE	[]		
REMARKS: LO2 LEAK REF: RI, NOTES.	AGE /NAS	FROM A CII	SENSE L OF 1	LI 2-2	NE 3-8	THROU 37 AND	GH F	REG RI/NA	ULAI	'OF	}.				EETI	:NG

ASSESSMENT DATE:		_	_	IASA DATA:	
ASSESSMENT ID: NASA FMEA #:		L		BASELINE NEW	<u></u>
MASA IMEA #.	0002-2			212311	()
	MPS				
	4541	F REPRESS	REGULATOR	R (PR5)	
IIII.	DOE IMM.			(22.5)	
LEAD ANALYST:	A.J.MAR	INO			
ASSESSMENT:					
CRITICAL FLIGH		REDUNDANC	Y SCREENS		CIL ITEM
HDW/FU		A	В	3	
NASA [2 /1R IOA [3 /3] [P] [NA] [F] [F NA]	P] NA]	[X] *
COMPARE [N /N	J	и][N] [N	1]	[N]
RECOMMENDATIONS:	(If d	ifferent 1	rom NASA)		
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* CIL RETENTION	RATTONAL	E: (If apr	olicable)		
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REMARKS: REPRESS VALVES A ENTRY REPRESS ON		FOR 90 SEC	DURING DU	JMP. HAZ	ARD DURING
REF: RI/NASA CI NOTES.	L OF 12-	23-87 AND	RI/NASA FN	MEA/CIL RE	EVIEW MEETING

ASSESSME ASSESSME NASA FME SUBSYSTE MDAC ID: ITEM:	NT I A #:	D:	MPS 062 MPS 455	-4550 9-1 0		REPRES	ss :	REGU	_	BASI	ELINE NEW	[x]	
LEAD ANA	LYST	:	A.J	.MAR	ОИЗ										
ASSESSME	NT:														
,	F	LIGH'	r			DUNDA							IL FEM	ſ	
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NASA IOA	[2	/1R /1R]	[[P P] [F]	[E	?]		[X X]	*
COMPARE	[/	1	[] [•]	[]		[]	
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* CIL RE	TENT	ION 1	RATI	ONALI	S :	(If ap	pl	icab		DEQU	JATE JATE	[]	
REMARKS: REPRESSU RELIEF S													Œ) <u>r</u>	OMP.

	NТ	II):	: 2/15/88 NASA DATA: MPS-4550A BASELINE [] 0629-3 NEW [X]													
SUBSYSTEM MDAC ID:				MPS 4550 LH2		IF	REI	PRES	s :	REGU	ILAI	or	(PR6)				
LEAD ANA	LYS	ST	:	A.J.	MAR	IN	0										
ASSESSME	NT:	:															
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM HDW/FUNC A B C																	
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NASA IOA	[1 2	/1 /1R]	[[N P	A]]	N. F	A]]	[[N. P	A]]	[[X X]	*
COMPARE	[N	/N]	[N]	[N]	[N]	[]	
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	Ţ		/]	ָ]	[3	[•] (2] ELI	ETE)
* CII. RE	TEI	ידיני.	TON 1	PATT(TANC	.F. :	(T:	f an	nl	icab	nlei						
	* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []																
REMARKS: LH2 LEAK REF: RI NOTES.													R. EA/CIL F	EV]	EV	7 I	ÆETI NG

ASSESSME ASSESSME NASA FME	NT IL);	MPS-45	51	NASA DATA: BASELINE [] NEW [X]									
SUBSYSTE MDAC ID: ITEM:			MPS 4551 LH2 MA	NI	F REPR	ESS	3 1	REGUI	ATO	OR (PR6)			=	
LEAD ANA	LYST:		A.J.MA	RI	NO									
ASSESSME	NT:													
					REDUND	ANC	Y	SCRE	EENS	3	CII		7	
CRITICALITY REDUNDANCY SCREENS CI FLIGHT IT HDW/FUNC A B C													•	
NASA IOA	[2 [3	/1R /3]	[P] NA]	[F N] A]]	P] NA]	[]	K]	*
COMPARE	[N	/N]	[N]	[N]	[N]	[]	1]	
RECOMMEN	DATIC	NS:	(If	di	fferen	t i	r	om NA	SA)	1				
-	[3	/3]	[NA]	(N	A]	[[] I\do			TE)
* CIL RE	TENTI	ON I	ANOITAS	LF	: (If	app	1	icabl	-	ADEQUATE NADEQUATE]	
ENTRY RE	PRESS	ONI	LY.							OUMP. HAZA				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4560	IPS-4560 BASELINE []								
SUBSYSTEM: MDAC ID: ITEM:	MPS 4560 PNEU VALVE HE									
LEAD ANALYST: A.J.MARINO										
ASSESSMENT:										
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM										
HDW/FU		в с	IIEM							
NASA [2 /1R IOA [3 /3	[P] [NA]	[NA] [P] [NA] [NA]	[x] *							
COMPARE [N /N] [N]	[] [и]	[и]							
RECOMMENDATIONS:	(If differe	ent from NASA)								
[/] []	[] []	[] (ADD/DELETE)							
* CIL RETENTION	RATIONALE: (If	applicable) ADEQUA INADEQUA								
REMARKS: REF: RI/NASA CI NOTES.	L OF 12-23-87	AND RI/NASA FMEA/C	IL REVIEW MEETING							

ASSESSM ASSESSM NASA FM	ENT	ID:		-4561		NASA DATA: BASELINE [] NEW [X]										
SUBSYST MDAC ID ITEM:			MPS 4561 PNEU		'E НЕ	SUPI	LY R	ELIE:	F VALV	E (R	(V4)					
LEAD AN	ALYS	T:	A.J.	MARIN	o											
ASSESSM	ENT:											11 de -				
		TICAI FLIGH	LITY	F	EDUN	DANCY	SCR	EENS			CIL					
		DW/FU		A		E	3	(C , .		IIE	iPi				
NASA IOA]	3 /3 3 /3]	[N	IA] IA]	[N [N	IA] IA]	[] []	NA] NA]	•	[[] *] :				
COMPARE	[/]	[]	[3	. []		[]				
RECOMME	NDAT	ions:	(1	[f dif	fere	nt fr	om N	ASA)								
-	[/]	[]	[]	[]	(AD	[D/D] ELETE)				
* CIL R	ETEN	TION	RATIO	NALE:	(If	appl	icab.		ADEQUA ADEQUA	TE	[]				
REMARKS REF: R	-	SA FM	IEA/CI	L REV	IEW	MEETI	NG N	OTES	•			(14 년 - 기술(14) 14 - 기술(14) 14 - 기술(14)				

ASSESSME ASSESSME NASA FME	NT ID:		61A	NASA DATA: BASELINE [] NEW [X]								
SUBSYSTE MDAC ID: ITEM:		MPS 4561 PNEU V	ALVE HE	SUPPLY RE	CLIEF VALVE	(RV4)						
LEAD ANA	LYST:	A.J.MA	RINO									
ASSESSME	NT:											
	CRITICAL FLIGH	T		DANCY SCRI		CIL ITEM						
	HDW/FU	NC	A	В	С							
NASA IOA	[1 /1 [3 /3]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[X] *						
COMPARE	[N /N	1	[]	[]	[]	[N]						
RECOMMEN	DATIONS:	(If	differe	nt from NA	ASA)							
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<u>.</u>		RATIONA	ALE: (If	applicabl	le) ADEQUATE INADEQUATE							
REMARKS:	/NASA FM	EA/CTT.	REVIEW 1	EETING NO	OTES.	v (4) * 2						

ASSESSME ASSESSME NASA FME	ENT II):	MPS-	4570	ATA: INE [] NEW [X]	[]				
SUBSYSTE MDAC ID:			4570	VALV	, et					
LEAD ANA	LYST	•	A.J.	MARIN	0					
ASSESSME	ENT:								. 100 -	
	F	LIGH	r		EDUNDAN				CIL ITEM	
NASA IOA	[1 [2	/1 /2]	[N	A] [A] [NA]	[NA] NA]	[X] * [X]	
COMPARE	[14	/N]	[] [1	[]	[]	
RECOMMEN	DATIO	ONS:	(I	f dif	ferent	from N	ASA)			
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* CIL RE		ION	RATIC	NALE:	(If ap	plicab		ADEQUA ADEQUA	TE []	
REMARKS: REF: RI NOTES.		A CI	L OF	12-23	-87 ANI	RI/NA	SA F	MEA/CI	L REVIEW MEETIN	G

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4580	PS-4580 BASELINE []								
SUBSYSTEM: MDAC ID: ITEM:	MPS 4580 LO2 PREVALVE									
LEAD ANALYST:	A.J.MARINO									
ASSESSMENT:										
CRITICALITY REDUNDANCY SCREENS CIL FLIGHT ITEM										
HDW/FU		C A B C								
NASA [1 /1 IOA [2 /1R] [NA]	[NA] [NA] [P]	[X] *							
COMPARE [N /N] [N]	[и] [и]	[]							
RECOMMENDATIONS:	(If differe	ent from NASA)								
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* CIL RETENTION RATIONALE: (If applicable) ADEQUATE [] INADEQUATE []										
REMARKS: REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.										

ASSESSME ASSESSME NASA FME	NT I	D:	MPS-4	590		NASA DATA: BASELINE [] NEW [X]								
SUBSYSTE MDAC ID:	M:		MPS 4590 LH2 P											
LEAD ANA	LYST	:	A.J.M	ARIN	0									
ASSESSME	NT:													
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	_	LIGH W/FU		A			В	C		TIEN.				
NASA IOA	[1 [2	/1 /1R		[N [P	A]	[NA] P]	[N. [P	A]	x]] *]			
COMPARE	[N	/N]	[]]	ľ	N]	[N]	[]			
RECOMMEN	DATI	ons:	(If	dif	fere	nt f	rom N	ASA)						
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ASSESSMEI ASSESSMEI NASA FME	NT ID:	MPS-46	500	NASA DATA: BASELINE [] NEW [X]									
SUBSYSTEMDAC ID:		MPS 4600 LH2 FF	EED MANI	F RTLS RE	PRESS ORIFIC	E (RP9)							
LEAD ANA	Lyst:	A.J.M	ARINO										
ASSESSME	NT:												
(CRITICAL FLIGH		REDUN	DANCY SCR	EENS	CIL ITEM							
	HDW/FU		A	В	c								
NASA IOA	[1 /1 [3 /3]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[X] * []							
COMPARE	[N /N	1	[]	[]	[]	[N]							
RECOMMEN	DATIONS:	(If	differe	nt from N	ASA)								
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* CIL RE	TENTION	RATIONA	ALE: (If	applicab	le) ADEQUATE INADEQUATE								
REF: RI	/NASA CI	L OF 12	2-23-87.										

ASSESSMENT	DATE: 2/15/88 ID: MPS-461 : 0145-1			NASA DATA: BASELINE [] NEW [X]					
SUBSYSTEM: MDAC ID: ITEM:	4610	SUPPLY FI	LTER (FL5)		÷				
LEAD ANALYS	T: A.J.MAR	RINO							
ASSESSMENT:									
	TICALITY FLIGHT	REDUNDANC	Y SCREENS	CIL ITEM					
	DW/FUNC	A	в с						
NASA [] AOI	2 /1R] [3 /3] [P] [NA] [F] [P NA] [NA] [X] *	,				
COMPARE [и /и] [[и]	и] [и] [N]					
RECOMMENDAT	ions: (If d	lifferent f	rom NASA)						
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	TION RATIONAL	E: (If app	AD	EQUATE []	: . =				
DURING ENTR	Y/LANDING WII	L CREATE A	FIRE HAZAR	NG OF HYDROGEN D. A/CIL REVIEW ME					

ASSESSME ASSESSME NASA FME	NT ID:	2/15/88 MPS-462 NA		NASA DATA: BASELINE [] NEW [X]										
SUBSYSTEMDAC ID:	M:	MPS 4620 PNEUMAT	TIC HE FI	.625" DIA)										
LEAD ANA	LYST:	A.J.MAF	RINO											
ASSESSME	NT:													
	CRITICAL		REDUNDA	NCY SCRE	ENS	CIL								
	FLIGH HDW/F		A	В	C	ITEM								
NASA IOA	[/3 /3] [NA]	[] [NA]	[] [NA]	* []								
COMPARE	[N /N] ([N]	[N]	[N]	[]								
RECOMMEN	DATIONS:	(If d	lifferent	from NA	SA)									
	[1 /1] [[NA]	[NA]		[A] ADD/DELETE)								
* CIL RE	TENTION	RATIONAL	LE: (If a	pplicabl										
					ADEQUATE INADEQUATE	[]								
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ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:	MPS-462		NASA DATA: BASELINE [] NEW [X]							
SUBSYSTEM: MDAC ID: ITEM:	MPS 4620 PNEUMAT									
LEAD ANALYST:	A.J.MAR	INO								
ASSESSMENT:	ASSESSMENT:									
CRITICA FLIG		REDUNDAN	CY SCREEN	s	CIL					
	UNC	A	В	С	11111					
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RECOMMENDATIONS	: (If d	ifferent	from NASA)						
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* CIL RETENTION	RATIONAL	E: (If ap		ADEQUATE NADEQUATE	ר ז					
REMARKS: THIS ASSESSMENT THE CHECK VALVE REF: RI/NASA O NOTES.	S (CV1, 2	, 3, 4).	E FROM TH	E DISCONNEC	CT (PD8) TO					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-46201	MPS-4620B BASELINE									
	MPS 4620 PNEUMATIO										
LEAD ANALYST:	A.J.MARIN	МО									
ASSESSMENT:	ASSESSMENT:										
CRITICAL FLIGH	CIL ITEM										
HDW/FU		A	В	C							
NASA [1 /1 IOA [3 /3] [1	NA] [NA] [NA] [NA] [NA] NA]	[X] *						
COMPARE [N /N] [] [] []	[N]						
RECOMMENDATIONS:	(If di	fferent i	From NASA)							
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* CIL RETENTION	RATIONALE	: (If app	olicable)								
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REMARKS: THIS ASSESSMENT 2, 3, 6, 7, 8, 9			ES FROM T	HE HELIUM	TANKS (TK1,						
41, 42). REF: RI/NASA CI NOTES.	L OF 12-2	3-87 AND	RI/NASA	FMEA/CIL R	EVIEW MEETING						

ASSESSMENT ASSESSMENT NASA FME	NT	ĪĪ	D:	1	MPS-4630									ASA DATA BASELINI NEV	Ē [X]		·· 4			
SUBSYSTEMDAC ID:				4								(.50" D	IA)										
LEAD ANA	LYS	ST	:	1	₹.J	. MA	RI	NC)														
ASSESSME	ASSESSMENT:																						
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COMPARE	[N	/N	•]		[N]		[N]		[N]	(1	Ŋ]		
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* CIL RE	TE	NT:	ION	R.	\TI	ONA	LE	::	(I	f a	ΡĮ	ol:	Lca	able	:)								
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REMARKS: IOA ATTEMPTED TO ANALYZE ALL 0.5 INCH HELIUM LINES UNDER ONE ANALYSIS WORKSHEET. RI/NASA TREATED THEM INDIVIDUALLY. IOA NOW BELIEVES THE RI/NASA APPROACH IS THE MORE APPROPRIATE ONE. HALF- INCH LINES WILL BE TREATED ON SUPPLEMENTAL ASSESSMENT SHEETS SUBSEQUENT TO THIS ONE.																							

ASSESSMENT DATE: 1 ASSESSMENT ID: 1 NASA FMEA #:					MP	MPS-4630A				NASA DATA: BASELINE [] NEW [X]								
		BSYSTEM: MPS AC ID: 4630 EM: PNEUMATIC HE PRESSURE LINE (.50" DI							" DI?	A)								
	LEAD ANA	LY	ST	:	A .	J.MA	RJ	INO										
	ASSESSME	TN	:															
		CR		ICAI LIGH				REDUN	DAN	CY SC	REEN	S			IL TEI			
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	* CIL RE	ETE	NT	ION	RAT	IONA	LI	E: (If	ap	plica	ble)			_				
											I	ADEQU NADEQU]		
	REMARKS: THIS ASS DOWNSTRE REF: RI NOTES.	SES EAM	S	OLEN	OID	INI	EI	RFACES	ON	THE	ACCU	MULATO	R LE	G.				ring

NASA FMEA #:				MPS-4630B					NASA DATA: BASELINE [] NEW [X]							
SUBSYSTIMDAC ID:				MPS 4630 PNEUMATIC HE PRESSURE LINE (.50" D						IA)	(A)					
LEAD AN	ALYS	T:		A.J.MARINO												
ASSESSMENT:														÷		
CRITICALI FLIGHT					ITY REDUNDANCY SCREENS						5		IL TE			
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COMPARE	[/]		[]	C	•]	[]	[•]	
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* CIL RI	eten	TI	ON I	RAT	IONA	LE	E: (I	f app	olio		•	ADEQUATE IADEQUATE	[]	
	REMARKS: THIS ASSESSMENT IS FOR THE LINE FROM THE PNEUMATIC ISOLATION															
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ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4630	oc	NASA DATA: C BASELINE [] NEW [X]						
SUBSYSTEM: MDAC ID: ITEM:	MPS 4630 PNEUMAT								
LEAD ANALYST:	A.J.MAR	INO							
ASSESSMENT:			•						
CRITICAL FLIGH		REDUNDANC	CIL	Ī					
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COMPARE [/] [] [] [1	[]			
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* CIL RETENTION	RATIONAL	E: (If app	olicable)						
ADEQUATE [] INADEQUATE []									
REMARKS: THIS ASSESSMENT IS FOR THE LINE FROM THE REGULATOR (PR4) TO THE UPSTREAM CHECK VALVE (CV8). REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.									

ASSESSMENT DATE: 2/16/8 ASSESSMENT ID: MPS-46 NASA FMEA #: 0190-3					סס			· - <u>-</u>	NASA DATA BASELINE NEV); ; ; [:]		7.434754 - S
SUBSYSTE MDAC ID:	M:		MPS 4630	rps = 10 mag							1996 (1996) A)		
LEAD ANALYST: A.J.MAR					INO								
ASSESSME	ASSESSMENT:												
	F	LIGH'	Г		REDUN					CI:			
	HD	W/FU	NC		A		В		C				
NASA IOA	[1	/1 /1]	[NA] NA]	_ [NA]	[[NA] NA]	[]	X] X]	*	
COMPARE	[/	1	[]	[]	[]	[]		
RECOMMEN	DATI	ons:	(I	f d	iffere	nt i	from 1	nasa))				
	[/]	[1	[]	[] (2	[\DD/1		ETE)
* CIL RE	TENT	ION I	RATIO	NALI	E: (If	app	olica	ble)			2 1		
				-	·			I	ADEQUATE NADEQUATE	[[]		
REMARKS: THIS ASSESSMENT IS FOR THE LINES FROM THE RELIEF VALVE CLOSEING SOLENOIDS (LV24, 25) TO THE RELIEF VALVES (PV7, 8). REF: RI/NASA CIL OF 12-23-87 AND RI/NASA CIL WORKSHEET OF 12-9- 87.													

ASSESSME ASSESSME NASA FME	NT ID:	MPS-46	30E		NASA DATA BASELINI NEV			
SUBSYSTE MDAC ID: ITEM:		MPS 4630 PNEUMA	TIC HE	IA)				
LEAD ANA	LYST:	A.J.MA	RINO					
ASSESSME	NT:							
	CRITICAL FLIGH		REDUN	DANCY SCRE	ENS	CIL ITEM		
	HDW/FT	JNC	A ·	В	С			
NASA IOA	[2 /1] [1 /1	R]]	[P] [NA]	[F] [NA]	[P] [NA]	[X] * [X]		
COMPARE	[N /N]	[N]	[N]	[N]	[]		
RECOMMEN	DATIONS	(If	differe	ent from NA	ASA)			
	[/]	[]	[]	[] (2	[] ADD/DELETE)		
* CIL RE	TENTION	RATIONA	LE: (If	applicabl	.e) ADEQUATE INADEQUATE			
THIS ASS (LV26, 2	REMARKS: THIS ASSESSMENT IS FOR THE LINE CONNECTING THE BLOWDOWN VALVES (LV26, 27). REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING							
NOTES.	, HADA C.	OI 12	. 23 07	ZAID NI/ NAC	a inunyotu i	CLIZIN HELLING		

ASSESSMENT ID: NASA FMEA #:	2/16/88 MPS-4630F 0144-1	BASEL	ATA: INE [] NEW [X]
SUBSYSTEM: MDAC ID: ITEM:		DIA)	
LEAD ANALYST:	A.J.MARINO		
ASSESSMENT:			
FLIGHT	TTY REDUNDANG T NC A	B C	CIL ITEM
NASA [3 /3 IOA [1 /1] [NA] [] [NA] [NA] [NA] NA] [NA]	[X] * [X]
COMPARE [N /N) [] [] []	[N]
RECOMMENDATIONS:	(If different	from NASA)	
[/] [] [] []	[] (ADD/DELETE)
	RATIONALE: (If app		
VALVE (LV27) TO TABORT. IOA CONCU NOMINAL MISSION. LOSS OF VEHICLE.	IS FOR THE LINE FITHE PURGE ORIFICE JRS. DEGRADED PUR INEFFECTIVE PURC	RI/NASA INDICA RGE WILL HAVE NO GE DURING RTLS OF	ATES 1/1 FOR EFFECT ON R TAL CAN CAUSE

ASSESSMENT DATE ASSESSMENT ID: NASA FMEA #:	MPS-463 0236-1	OG	BASELINE [] NEW [X]					
MDAC ID:	MPS 4630 PNEUMAT	IC HE PRESSU	RE LINE (.50" DI	IA)				
LEAD ANALYST:	A.J.MAR	INO						
ASSESSMENT:								
FLIG	HT	REDUNDANCY		CIL ITEM				
	UNC	A B	С					
NASA [2 /1 IOA [1 /1	R] [P] [F NA] [NA] [P]] [NA]	[X] * [X]				
COMPARE [N /N] [и] [и] [и]	[]				
RECOMMENDATIONS	: (If d	ifferent fro	m NASA)					
[1 /1] [NA] [NA] [NA] (?	[] ADD/DELETE)				
* CIL RETENTION	RATIONAL	E: (If appli		r 1				
			ADEQUATE INADEQUATE	į				
CHECK VALVE (CV NON-ACCUMULATOR OVERPRESSURIZAT	8) TO ALL LEG. A ION.	DOWNSTREAM SINGLE FAILU	S FROM THE UPSTI SOLENOID INTERFA RE CAN CAUSE COM /NASA FMEA/CIL I	ACES ON THE MPARTMENT				
NOTES.								

ASSESSMENT DA ASSESSMENT ID NASA FMEA #:	: MPS-46	30H	OH BASELINE [] NEW [X]							
SUBSYSTEM: MDAC ID: ITEM:		TIC HE PI	TIC HE PRESSURE LINE (.50" DIA)							
LEAD ANALYST:	A.J.MA	RINO								
ASSESSMENT:	ASSESSMENT:									
	CALITY IGHT	REDUNDA	CIL ITEM							
	/FUNC	A	В	С						
NASA [1 IOA [1	/1] /1]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[X] *					
COMPARE [/ 1	[]	[]	[]	[]					
RECOMMENDATIO	NS: (If	different	from NAS	SA)						
ן נ	/ 1_	[]	[]	[] (A)	[DD/DELETE)					
* CIL RETENTI	ON RATIONA	LE: (If a	applicable	ADEQUATE INADEQUATE						
REMARKS: ITHIS ASSESSMENT IS FOR THE LINE FROM THE FILTER (FL5) TO THE PNEUMATIC ISOLATION VALVES (LV7, 8). REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.										

ASSESSME ASSESSME NASA FME	NT TO:	MPS-	4630J	ATA: INE [] NEW [X]		
SUBSYSTE MDAC ID:		MPS 4630 PNEU		PRESSURE 1	LINE (.50"	DIA)
LEAD ANA	LYST:	A.J.	MARINO			
ASSESSME	ENT:					
		ALITY GHT	REDUN	DANCY SCRI	EENS	CIL ITEM
			A	В	С	IIEM
NASA IOA	[1 /	1] 1]	[NA] [NA]	[NA] [NA]	[NA] [NA]	[X] * [X]
COMPARE	[/]	[]	[]	[]	[]
RECOMMEN	IDATION	s: (I	f differe	nt from NA	ASA)	
-	[/]	[]	[]	[]	[] (ADD/DELETE)
* CIL RE		N RATIO	NALE: (If	applicab	le) ADEQUAT INADEQUAT	
THIS ASS REPRESS THE HAZA	SESSMEN VALVE ARD EXI	(LV41) STS DUR	TO THE CO	RRESPONDI	NG REGULATO RESSURIZATI	
REF: RI	/NASA	CIL OF	12-23-87	AND RI/NAS	SA FMEA/CII	L REVIEW MEETING

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4630	OK ·	NASA DATA: BASELINE [] NEW [X]						
MDAC ID:	MPS 4630 PNEUMATI	IC HE PRES	E (.50" DIA	(A)					
LEAD ANALYST:	A.J.MARI	INO							
ASSESSMENT:		•							
CRITICAL FLIGH		REDUNDANC	Y SCREENS	. .	CIL ITEM				
HDW/FU		A	В	C	TIEM				
NASA [1 /1 IOA [1 /1] [NA] [NA] [NA] [NA] [NA] NA]	[X] * [X]				
COMPARE [/] [] [] [3	[]				
RECOMMENDATIONS:	(If di	ifferent f	rom NASA)						
] [] [] [] (AD	[] D/DELETE)				
* CIL RETENTION	RATIONALE	E: (If app		ADEQUATE IADEQUATE					
REMARKS: THIS ASSESSMENT REPRESSURIZATION PERIODS OF REPRE IT IS 2/1R. REF: RI/NASA CI NOTES.	VALVES (SSURIZATI	(LV40, 41) ION (DUMP,	ENTRY)	AZARD EXIST ONLY. AT C	'S DURING				

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			MPS-	4630	L	NASA DATA: BASELINE [] NEW [X]									
SUBSYST					MPS 4630 PNEUMATIC HE PRESSURE LINE (.50" D							- A)			
LEAD AN	ALY	ST:		A.J.	MARI	МО									
ASSESSM	ENT	:													
CRITICAL FLIGH				ITY REDUND			SCR	EENS			CIL				
				NC		A	E	3	(2					
NASA IOA]	1	/1 /1]	[NA] NA]	[N [N	A] A]	[] []	NA] NA]		[X [X]	*	
COMPARE					[]	[]	[]		[]		
RECOMME	NDA	TIO	NS:	(I	f di	ffere	nt fr	om N	ASA)						
_	[/]	[]	[]	ĺ]		[DD/D		TE)	
* CIL R		NTI	ON	RATIO	NALE	: (If	appl	icab.	1	ADEQUA ADEQUA	TE TE	[]		
INADEQUATE [] REMARKS: THIS ASSESSMENT IS FOR THE LINE FROM THE DOWNSTREAM LH2 MANIFOLD REPRESS VALVE (LV43) TO THE CORRESPONDING REGULATOR (PR6). THE HAZARD EXISTS DURING PERIODS OF REPRESSURIZATION (DUMP, ENTRY) ONLY. AT OTHER TIMES IT IS 3/1R. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING NOTES.															

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/16/88 MPS-4630M 0638-1	NASA DATA: BASELINE [] NEW [X]					
SUBSYSTEM: MDAC ID:	(.50" DIA)						
LEAD ANALYST:	A.J.MARINO						
ASSESSMENT:							
FLIGH'		JNDANCY SCREENS B C	ITEM				
NASA [1 /1 IOA [1 /1] [NA]] [NA]	[NA] [N. [NA] [N.	A] [X]* A] [X]				
COMPARE [/] []	[]] []				
RECOMMENDATIONS:	(If differ	rent from NASA)					
[/	1 [,1	[] [·] [] (ADD/DELETE)				
* CIL RETENTION	RATIONALE: (1	A.	DEQUATE [] DEQUATE []				
PERIODS OF REPRES	VALVES (LV42 SSURIZATION (INE CONNECTING TO 2, 43). THE HAZ (DUMP, ENTRY) ON					

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4640	oc		NASA DATA: BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM: (.25",.38" DIA)	MPS 4630 PNEUMATI	C HE PRE	SS VALVE	ACTUATION 1	LINE
LEAD ANALYST:	A.J.MAR	INO			
ASSESSMENT:					
CRITICAL FLIGH		REDUNDAN	CY SCREE	NS	CIL ITEM
HDW/FU		A	В	С	LILM
NASA [2 /1R IOA [1 /1] [P] [NA] [F] NA]	[P] [NA]	[X] * [X]
COMPARE [N /N] [и] [и]	[и]	[]
RECOMMENDATIONS:	(If d	ifferent	from NAS	A)	•
[1 /1] [NA] [NA]	[NA]	[] DD/DELETE)
* CIL RETENTION	RATIONALI	E: (If ap	_) ADEQUATE INADEQUATE	[]
REMARKS: THIS ASSESSMENT PNEUMATIC CHECK ON THE NON-ACCUM COMPARTMENT OVER REF: RI/NASA CI NOTES.	VALVE (C ULATOR LI PRESSURI	V8) TO AL EG. A SI ZATION.	ND 0.38" L DOWNST NGLE FAI	LINES FROM REAM SOLENO: LURE CAN CAU	THE UPSTREAM ID INTERFACES JSE

ASSESSMI ASSESSMI NASA FMI	ENT	ID:	MPS-						ASA DATA BASELINI NEV			
SUBSYSTEMDAC ID: ITEM: (.25",.3	•		4640	MAT	іс н	E PRE	SS VAI	LVE AC	TUATION	LINE	}	
LEAD ANA	ALYSI	r:	A.J.	MAR	INO							
ASSESSMI	ENT:									. •		
		rical Fligh			REDI	JNDAN	CY SCI	REENS		CII		
·			NC		A		В	c				
NASA IOA	[]	/ L /1]	[NA]]	NA]	[[N] [A]] K]]	*
COMPARE	[]	1 /N]	Į.	и ј	[N]	[N]	[N	r]	
RECOMMEN	TAC	cons:	(I:	f di	iffe	rent	from 1	NASA)				
-	[/]	Ţ]	[]	[] (2	[ADD/E	ELE'	TE)
* CIL RI	ETENT	CION	RATIO	NALI	E: (If ap	plicab				_	
									DEQUATE DEQUATE]	
UNDER ON	EMPTI NE AI BELI HESE	NALYS IEVES LINE	IS WOLLS WILL	RKSI RI/ <u>1</u> L BI	HEET NASA E TRI	RI, APPRO EATED	/NASA OACH_T ON SU	TREAT O BE JPPLEM	NCH HELI ED THEM THE MORE	INDI	VID	UALLY.

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/16/88 MPS-4640A 0119-1		NASA DATA BASELINE NEW	
MDAC ID:	MPS 4640 PNEUMATIC	HE PRESS VALVE	ACTUATION :	LINE
LEAD ANALYST:	A.J.MARINO			
ASSESSMENT:				
FLIGH		EDUNDANCY SCREEN B	rs ·	CIL ITEM
NASA [1 /1 IOA [1 /1] [NA] [NA	A] [NA] [A] [NA] [NA] NA]	[X] * [X]
COMPARE [/] [] [] []	[]
RECOMMENDATIONS:	(If diff	ferent from NASA	()	
[2 /1R] [P] [F] [[] DD/DELETE)
* CIL RETENTION	RATIONALE:		ADEQUATE	[]
REMARKS: FAILURE OF THE L INTO THE AFT COM ISOLATION VALVE ONLY. REF: RI/NASA CI NOTES.	PARTMENT FO (PV8) AT ME	ECKV ALVE CV30 W DLLOWING THE OPE ECO. THE FAILUR	VILL ALLOW ENING OF TH RE IS 1/1 D	LH2 LEAKAGE E RELIEF URING RTLS

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/16/88 MPS-4640 0122-1	DB	Ŋ	VASA DATA: BASELINE NEW	
SUBSYSTEM: MDAC ID: ITEM: (.25",.38" DIA)	MPS 4640 PNEUMATI	C HE PRES	S VALVE AC	CTUATION L	INE
LEAD ANALYST:	A.J.MAR	INO			
ASSESSMENT:					and the second
CRITICAL: FLIGH	ITY F	REDUNDANC	Y SCREENS		CIL ITEM
HDW/FU	NC	A	В	3	
NASA [1 /1 IOA [1 /1] [NA] [NA] [NA] [N NA] [N	IA] IA]	[X] * [X]
COMPARE [/] [] [] []	[]
RECOMMENDATIONS:	(If di	ifferent f	rom NASA)		
[2 /1R] [P] [F] [F		[] D/DELETE)
* CIL RETENTION	RATIONALE	E: (If app		ADEQUATE ADEQUATE	Γ 1
REMARKS: THIS ASSESSMENT REPRESSURIZATION FOR A HELIUM LEA HYDROGEN LEAK. ABORT ONLY.	IS FOR THE VALVES (K TO OCCU THE FAILU	(LV75, 75) JR DURING JRE IS 1/1	NNECTING T . TWO FAI NOMINAL FI DURING AN	THE LH2 MA LLURES ARE LIGHT, AND N RTLS	NIFOLD RTLS REQUIRED THREE FOR A
REF: RI/NASA CI	L OF 12-2	23-87 AND	RI/NASA FM	IEA/CIL RE	VIEW MEETING

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/16/88 MPS-464 0190-1	OD	N	ASA DATA: BASELINE NEW		
SUBSYSTEM: MDAC ID: ITEM: (.25",.38" DIA)	4640	IC HE PRESS	VALVE AC	TUATION L	.INE	
LEAD ANALYST:	A.J.MAR	INO				
ASSESSMENT:						
FLIGH		REDUNDANCY A B			CIL ITEM	
•			_			
NASA [1 /1 IOA [1 /1] [NA] [N NA] [N	A] [N A] [N	A] A]	[X] *	
COMPARE [/] [] [] [1	[]	
RECOMMENDATIONS:	(If d	ifferent fr	om NASA)			
. [/] [] [] [] (AD	[] DD/DELETE)	
* CIL RETENTION	PATTONAT.	E: (If appl	icable)			
	RATIONAL	E. (II appi	A INA	DEQUATE DEQUATE	[]	
REMARKS: THIS ASSESSMENT SOLENOID VALVE TO PROPELLANT VALVE PD2, LV18 TO PV4 LV14 AND LV84 TO THE PD1 LATCH AN	TO A PROP E. THESE I, LV20 T D PV2, LV	ELLANT VALV ARE: LV50 O PV5, OV22 16 AND LV85	UM LINES E IN ORDE TO PD3, TO PV6, TO PV3,	THAT CONN R TO OPER LV46 TO F LV12 AND LV76 TO F	NECT A RATE THE PD1, OV48 TO LV83 TO PV PV19, LV65	1 , T(

PRESSURIZED DURING ASCENT.

NOTES.

REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING

ASSESSMI ASSESSMI NASA FMI	ent Ent Ea	DA II #:	ATE: D:	2/16/8 MPS-46 0191-3	38 54(L	Œ					BASELINE NEW	[
SUBSYSTI MDAC ID: ITEM: (.25",.3	:			4640	AT:	IC HE	PRES	ss	VALV	E 2	ACTUATION 1	LINE	
LEAD ANA	ALY:	ST	:	A.J.M	AR.	INO							
ASSESSMI	ENT	:										ef 1 8kL	
•			ICAL	ITY		REDUN	DANG	CY	SCRE	ENS	5	CIL	
				NC		A		В			С	4 1 14	••
NASA IOA]	2 1	/1R /1]	[P] NA]	[F NA]	[P] NA]	[X] *
COMPARE	[N	/N]	[N]	[N]	[иј	[]
RECOMMEN	VDA'	ΓI	ONS:	(If	d :	iffere	nt i	fro	om NA	SA))		
-	[1	/1	1	[NA]	[N?	A]	[NA]	[DD/D] ELETE)
* CIL RI		NT:	ION 1	RATION	AL	E: (If	apı	pli	cabl		ADEQUATE NADEQUATE	[]
PROPELLA TO PV22 LV21 TO LATCH. DURING A LINE RUI OVERPRES REF: R	SES: ANT PV AL ASC PTU	AL' V5 5, L (EN' RE	VE TO ALVE 1 TO LV2: OF TO AFTO ZATION	O A PRO THES PD3, 1 TO PO HESE L. ER OPEI	OPI SE LV V6 INI	ELLANT ARE: 47 TO , LV66 ES ARE	VAI LV PD1, TO UNI	LVI 72 , I PI PRI	TO P TO P LV49 D1 LA ESSUR	ORI V17 TO TCI IZI	THAT CONDER TO OPER TO	RATE PV1 TO TO	THE 8, LV79 PV4, PD2 LOSED)
					2-:	23-87	AND	RJ	(/NAS	A I	FMEA/CIL RI	EVIE	W MEET

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4640	OF		NASA DATA: BASELINE [] NEW [X]			
SUBSYSTEM: MDAC ID: ITEM: (.25",.38" DIA)	MPS 4640 PNEUMAT	IC HE PRE	SS VALVE	ACTUATION	LINE		
LEAD ANALYST:	A.J.MAR	INO					
ASSESSMENT:							
CRITICAI FLIGH	JTY TT	REDUNDAN	CY SCREEN	S	CIL ITEM		
		A	В	C			
NASA [1 /1 IOA [1 /1] [NA] [NA] [NA] [NA] [NA] NA]	[X] *		
COMPARE [/	1 [] [] []	[]		
RECOMMENDATIONS:	(If d	ifferent	from NASA	.)			
. [/] [] [] [] (A	[] ADD/DELETE)		
* CIL RETENTION	RATIONAL	E: (If ap	plicable)				
			I	ADEQUATE NADEQUATE			
REMARKS: THIS ASSESSMENT SYSTEM. THEY AF TO LV13, LV81 TO	RE: LV13	TO PV1,	LV15 TO F				
REF: RI/NASA CI 87.	L OF 12-	23-87 AND	RI/NASA	CIL WORKSH	EET OF 12-10		

SUBSYSTEM: M	MDC		•
MDAC ID: 4		S VALVE ACTUATIO	ON LINE
LEAD ANALYST: A	A.J.MARINO		
ASSESSMENT:			·
CRITICALIT FLIGHT	TY REDUNDANC	y screens B c	CIL
HDW/FUNC	C A	В С	
NASA [2 /1R] IOA [1 /1]] [P] [] [NA] [P] [P] NA] [NA]	[X] *
COMPARE [N /N]] [N] [и] [и]]
RECOMMENDATIONS:	(If different f	rom NASA)	
[1 /1]] [AN] [NA] [NA]	[] (ADD/DELETE)
* CIL RETENTION RA	ATIONALE: (If app	licable) ADEQUAT INADEQUAT	ו זיין איי
REMARKS: THIS ASSESSMENT IS & DRAIN VALVES TO PV11, LV35 TO PV12 PRESSURIZED DURING POSSIBLE AFT COMPAREF: RI/NASA CIL 87.	THEIR CLOSING SO 2, LV29 TO PV9 AN G ASCENT. ARTMENT OVERPRESS	IUM LINES THAT OLENOIDS. THESE D LV31 TO PV10.	CONNECT THE FILL ARE: LV33 TO THESE LINES ARE

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4640H	NASA DATA BASELINE NEW	
MDAC ID:		SS VALVE ACTUATION	LINE
LEAD ANALYST:	A.J.MARINO		*
ASSESSMENT:			
CRITICAL FLIGH	LITY REDUNDANC	CY SCREENS	CIL ITEM
HDW/FU	INC A	ВС	
NASA [3 /1R IOA [1 /1	P [P] [NA] [F] [P] NA] [NA]	[X] * [X]
COMPARE [N /N] [N][иј [иј	[]
RECOMMENDATIONS:	(If different i	from NASA)	
[1 /1] [NA] [NA) [NA] (A	[] ADD/DELETE)
* CIL RETENTION	RATIONALE: (If app	plicable) ADEQUATE INADEQUATE	
VALE TO A PROPEL VALVE. THESE AR TO PV21. THESE LINES ARE REMAINDER OF THE RUPTURE DURING FROM SHRAPNEL IM	LLANT VALVE IN ORDERE: LV36 TO PV14, UNPRESSURIZED DURING MISSION. PRELAUNCH OPERATION OPERATI	UM LINES THAT CONNE ER TO OPERATE THE F 15, 16, LV77 TO PV ING ASCENT AND REMA	ECT A SOLEONID PROPELLANT 720 AND LV78 AIN SO FOR THE OF VEHICLE

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/16/88 MPS-4640I 0194-1	N2 1	ASA DATA: BASELINE [] NEW [X]			
SUBSYSTEM: MDAC ID: ITEM: (.25",.38" DIA)	MPS 4640 PNEUMATIC HE PR		FUATION LINE			
LEAD ANALYST:	A.J.MARINO					
ASSESSMENT:						
FLIGH	ITY REDUNDA T		ITEM			
HDW/FU	NC A	в с				
NASA [3 /1R IOA [1 /1	[P]] [NA]	[F] [P [NA]] [X] .*.			
COMPARE [N /N	ן וו ן	[и] [и] []			
RECOMMENDATIONS:	(If different	from NASA)				
[1 /1] [NA]	[NA] [NA	A] [] (ADD/DELETE)			
* CIL RETENTION	RATIONALE: (If a	A	DEQUATE [] DEQUATE []			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-4640J	1	NASA DATA: BASELINE [] NEW [X]	
SUBSYSTEM: MDAC ID: ITEM: (.25",.38" DIA)	MPS 4640 PNEUMATIC	HE PRESS VALVE A	CTUATION LINE	
LEAD ANALYST:	A.J.MARINO			
ASSESSMENT:				
CRITICA FLIG		EDUNDANCY SCREENS	CIL ITEM	
	INC A	В	C	
NASA [2 /11 IOA [1 /1	R] [P] [NA] [F] [] A] [NA] []	P	
COMPARE [N /N] [N] [N] [N] []	
RECOMMENDATIONS	(If diff	ferent from NASA)		
[/] [] [] [] [] (ADD/DELET	E)
			ADEQUATE []	
REMARKS: THIS ASSESSMENT IS FOR THE LH2 HELIUM PRESSURIZATION FLEXIBLE HOSE ASSEMBLY (CV13, 14, 15 TO PR6). THIS FAILURE IS 2/1R FOR LEAKAGE OF HYDROGEN (SECOND FAILURE - CV14 OR CV15) OR HELIUM (SECOND FAILURE - REGULATOR PR6). REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING				

(4) 人名阿雷巴 (坦德基尔 (2011)

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	MPS-464	OK 1	NASA DATA: BASELINE [] NEW [X]
SUBSYSTEM: MDAC ID: ITEM: (.25",.38" DIA)	4640	IC HE PRESS VALVE A	CTUATION LINE
LEAD ANALYST:	A.J.MAR	INO	
ASSESSMENT:			
FLIGHT	r	REDUNDANCY SCREENS A B	CIL ITEM
HDW/FUI	NC	A B	ý
NASA [2 /1R IOA [1 /1] [P] [F] [I	P
COMPARE [N /N] [и] [и] [1	4] []
RECOMMENDATIONS:	(If d	ifferent from NASA)	
[/] [] [] [] [] (ADD/DELETE)
	RATIONALI		ADEQUATE [] ADEQUATE []
HOSE ASSEMBLY (CY THIS FAILURE IS 2 OR CV12) OF HELIC	V10 TO CV 2/1R FOR JM (SECON	LEAKAGE OF OXYGEN ND FAILURE - REGULA	(SECOND FAILURE - CV1
NOTES.			

ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:			NASA DATA: BASELINE [] NEW [X]				
SUBSYSTEM: MDAC ID: ITEM: (.25",.38" DIA)	MPS 4640 PNEUMATI	C HE PRESS VALVE A	CTUATION LINE				
LEAD ANALYST:	A.J.MARI	ио					
ASSESSMENT:							
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REMARKS: THIS ASSESSMENT IS FOR THE REPRESSURIZATION LINE FROM CV13 TO CV24. REF: RI/NASA CIL OF 12-23-87 AND RI/NASA FMEA/CIL REVIEW MEETING							
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LEAD ANALYST:	A.J.MARINO								
ASSESSMENT:									
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REF: RI/NASA FMEA/CIL REVIEW MEETING NOTES.

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LEAD ANA	LYST	: :	A.J.	MARIN	5					
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ASSESSMENT DATE: ASSESSMENT ID: NASA FMEA #:	2/11/88 MPS-5000A 2182-1	NASA DATA: BASELINE NEW	[x]					
SUBSYSTEM: MDAC ID: ITEM:	EPD&C/MPS 5000 LO2 PREVALVE C	CONTROL CIRCUIT						
LEAD ANALYST:	HOLDEN/LOWERY							
ASSESSMENT:			, \$115mm #35					
CRITICAL		DANCY SCREENS	CIL ITEM					
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REMARKS: 9 OPEN MDM BLOCKING DIODES. FUNCTIONAL CRITICALITY DETERMINED BY LIKE AND UNLIKE REDUNDANCY.								